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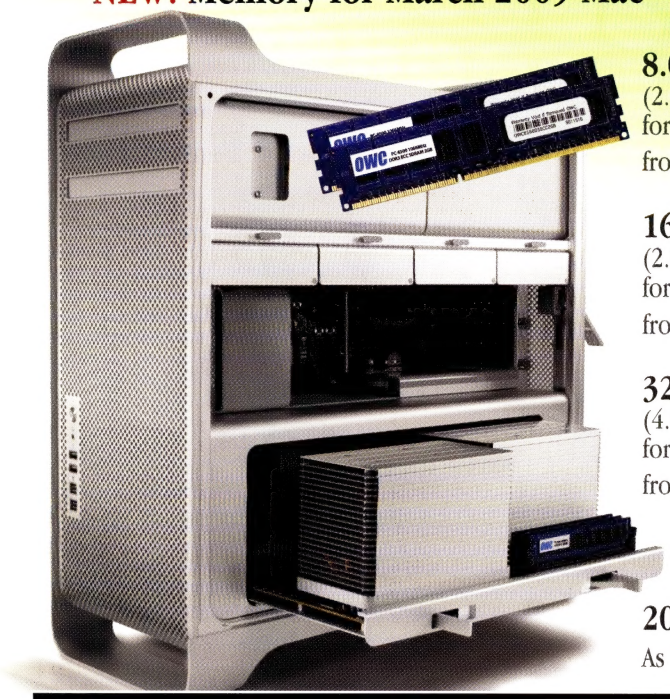

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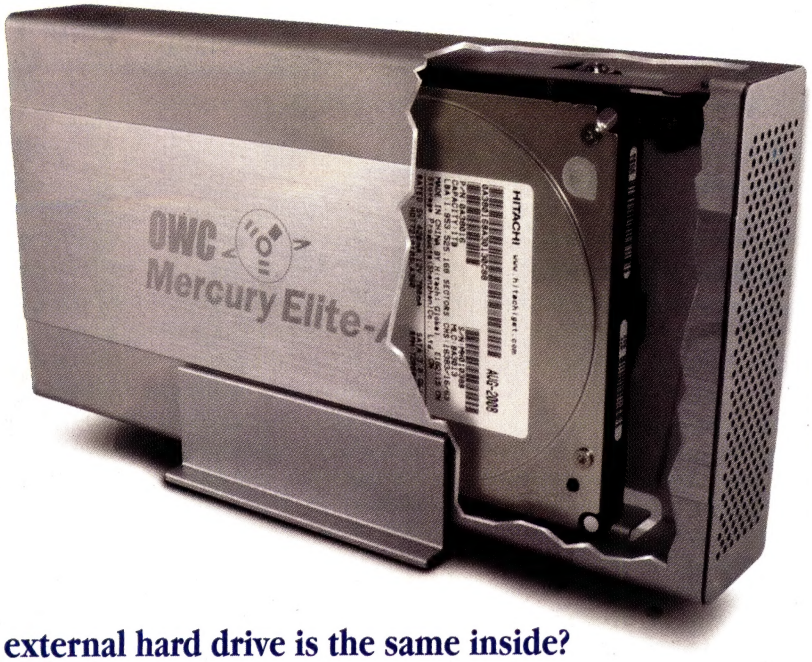

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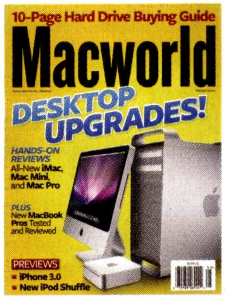

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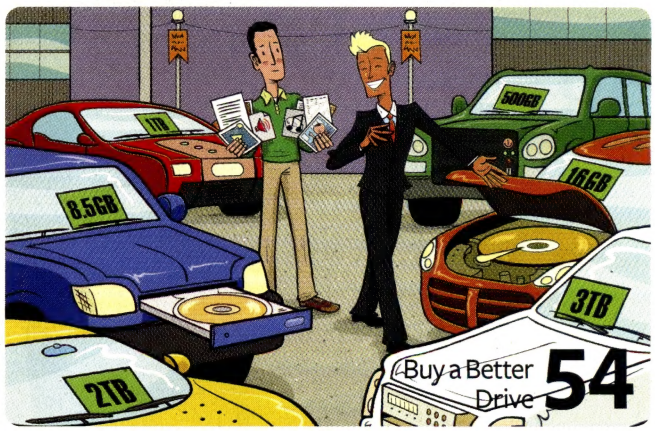

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MACWORLD.COM'S TOP 5

The top 5 stories on Macworld.com are:

1 **First Look: Safari 4 Beta**
Rob Griffiths looks at Apple's new browser and finds that improvements abound (macworld.com/4464).

2 **Review: iPhoto '09**
High-profile upgrade of iLife application debuts face recognition and geotagging (macworld.com/4319).

3 **Review: iMovie '09**
iMovie HD 6 is gone, but Apple's new video editor surpasses all previous versions (macworld.com/4407).

4 **Review: iWeb '09**
Flexible uploading and new widgets enhance the latest version of iLife's Web builder (macworld.com/4408).

5 **Hands On with an Imaginary Apple Netbook**
Jason Snell wonders if a hacked PC laptop tells us anything about Apple's future (macworld.com/4465).

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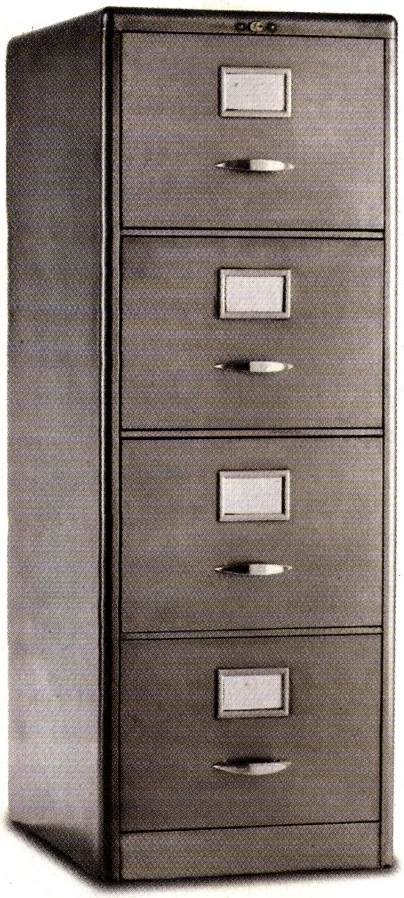

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Apple Marches On

The company moves forward on Macs, iPods, and the iPhone

For a company that was supposed to ease up on the throttle while its CEO was out on medical leave, Apple is keeping pretty busy. And judging by its series of product announcements in March, it's doing so on several fronts at once.

Desktop Invasion

The wave of announcements started with a refresh of Apple's entire desktop product line—new iMacs, Mac minis, and Mac Pros. (Our complete reviews of these new systems start on page 44.) From the outside, these new Macs are indistinguishable from their predecessors. But inside, they've been upgraded in several interesting ways.

For example, the Intel processors in the new Mac Pros offer one particularly fascinating innovation: each of their processor cores can be divided into two "virtual cores." If you open Activity Monitor on one of the new eight-core machines, it will report that your Mac is using *16 independent processor cores*—a staggering amount of multitasking power.

The most exciting news about the Mac mini is that (to paraphrase *Monty Python*) it's not dead yet. For a long time now, rumors have been swirling that the mini was destined for the land of wind and ghosts. Yet we now have faster Mac minis sporting improved graphics, more storage and RAM capacity, and USB 2.0 and FireWire 800 connectivity.

Those improvements mean I could feasibly replace my Apple TV with a mini. As a full-fledged Mac, it can play video formats the Apple TV can't, and its Web browser can display content (such as Hulu.com) that's generally blocked from set-top boxes. My past attempts at using a mini as a media center failed largely because I had to attach a keyboard and mouse to it. But thanks to iPhone apps that let you remotely control a Mac (macworld.com/4504), the mini could be a remarkably flexible tool for viewing all kinds of media on your TV.

PHOTOGRAPH BY PETER BELANGER

If March was any indication, there is much, much more still to come.

Shuffling Along

Apple's new iPod shuffle (page 20) sports a headphone jack and an on/off switch, and that's about it. The buttons for controlling playback have been moved to a controller on one of the earbud cords. I'm not a big fan of that decision; I liked the second-generation shuffle, which was small yet still remarkably functional. But the new shuffle does provide some insight into Apple's design decisions.

In this case, the story begins with the headphones Apple released last fall with new iPod nano, classic, and touch models. They had integrated volume controls and a single center button that let you play and pause (one click), move forward (two clicks), and move back (three clicks).

Those headphones allowed Apple to make the iPod shuffle smaller, lighter, and simpler—in other words, closer to Apple's design ideal. That philosophy has its flaws. (Remember the first-generation iPod touch, which lacked a physical volume button.) But Apple has followed it consistently and, for the most part, done well with it.

iPhone the Third

The other big March announcement was the preview of Apple's next-generation iPhone 3.0 software, due this summer (page 20). It shows that the company is committed to moving the iPhone ahead—not just as a product, but as a platform for applications.

Sure, Apple previewed loads of features that'll please end users, including the long-requested ability to cut, copy, and paste. But Apple officials spent most of the introduction previewing new features that developers will be able to build into their apps, such as Bluetooth networking, embedded Google maps, GPS directions, and support for selling content from within the apps.

That focus on developers is indicative of Apple's long-range iPhone strategy. First, the original iPhone traded some common phone features for functionality you couldn't get from any other phone. Next, the App Store tapped into third-party apps to make the iPhone more useful and fun. With iPhone 3.0, Apple is filling in some of those missing features while aggressively supporting the next generation of must-have apps.

Apple's March announcements show that the company is hardly resting or waiting for instructions from above. It's ambitious and energetic. And if March was any indication, there is much, much more still to come.

What do you think? Are the new desktops tempting you? Are fewer buttons always better? What would you want to see in iPhone 4.0? Send your thoughts to me at jason_snell@macworld.com, or join the discussion at forums.macworld.com.

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Winners and Losers

The Eddys stir controversy while Leopard takes a beating

Eddys

Almost a third of your winners are not Mac-specific ("The 24th Annual Editors' Choice Awards," February 2009). Your list includes Web sites, digital cameras, and printers that should be getting their awards from a *Cameraworld*- or *Printerworld*-type magazine, not *Macworld*. The Eddy Awards should be the pinnacle of achievement for the Mac community, so shouldn't they reflect the very best Mac-only products?

AbbiV

The dearth of Mac-specific products in your awards says something about the state of the Mac. We're no longer in the 1990s, when we had to find Mac-specific products and had paltry options. Now most products for the PC also work on the Mac. Hopefully, the Mac market will continue to grow and become big enough to make third parties take notice, but stay small enough to keep the hordes of viruses that clog Windows software away.

thebiggfrogg

After ticking off the features of the Canon Pixma MX850 multifunction printer, you conclude that "it's pretty much everything you want in a multifunction." What about wireless connectivity? In this day and age, the lack of that is a serious shortcoming in an Editors' Choice Award–winning product.

Bill Smith

Piling On Leopard

Rob Griffiths' rant on the problems with Leopard ("Leopard's Lingering Annoyances," *MacUser*, February 2009) is dead-on. It is mystifying to me that Apple would implement changes that provide less information or require more steps. Yet another irritation with Spotlight in the Finder is the elimination of the ability to specify how to group and sort the search results. In OS X 10.4, different types of documents (HTML, PDF, Word, and so forth) were listed and grouped separately below labeled bars. That feature is gone in Leopard. And when choosing Show View Options from the toolbar, you are presented with the message "There are no view options for the Searching 'This Mac' window."

Bob Morgan

I'd like to add a couple of Leopard annoyances to those Rob Griffiths mentioned in the February 2009 issue: iCal lost the ability to hide *all* To Do items outside of the current calendar view. And if I change a Finder window to display in column mode, any new Finder window will also open in column mode.

Tom Ropers

The Leopard article was a bit over the top. Yes, our glass is only 99.9 percent full, but why complain about the remaining 0.1 percent? If you really want heartache, take a look at Vista. Sure, Leopard has a few glitches, but so does my Dodge. I'm very satisfied with a glass that's 99.9 percent full.

TJ Hanson

Rob Griffiths is pretty much on the mark. The only thing I would add to his list is the need for a greater set of options for modifying the mouse and

PHOTOGRAPH BY PETER BELANGER

OVERHEARD ON THE FORUMS

Apple has denied its roots by making it nearly impossible for individual hobbyists to develop and distribute their work as freeware or shareware.

Flowney
macworld.com/4463

It's not bandwidth hogs that are the problem; it's the lack of infrastructure improvements resulting from pure greed by telcos.

HalanR
macworld.com/4462

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pointer behavior. Many OS X users have difficulty using the mouse because Leopard has an unusual mouse-acceleration curve, and there's no way to modify that curve without third-party add-ons. Different people use mice in different ways, but unlike Windows, OS X doesn't recognize this fact.

Parrish S. Knight

Panther had the most wonderfully practical zoom feature in the world. I know because I'm legally blind and it was that feature that sold me on my first Mac laptop. When Tiger came out, the zoom had entirely stopped following cursor movements in text programs, and Leopard is just the same as Tiger. I've stopped using my laptop for checking e-mails or writing documents unless it is unavoidable.

If Apple hired people who rely on the Universal Access features to help beta-test them, maybe the company would get more practical feedback.

Kim Caulfield

Back to My Whack

Glenn Fleishman's article about Back to My Mac confirms all my frustrations with the program (*Mobile Mac,* February 2009). The problems are worsened by Apple's apparent indifference to those of us unable to make it work. What really puzzles me is that if LogMeIn works just fine and is free, then why can't Apple come up with an equally functional program?

Mike Adams

CS4 Responses

Your review does not comment on the increasingly PC-like interface that Photoshop CS4 is inflicting on us ("Photoshop CS4 and CS4 Extended," February 2009). It may solve some of the shortcomings in the Windows version, but on a Mac the interface could have been done much better. It's shocking that a company as big as Adobe could be so ignorant about its core market.

Simpletext

With Dreamweaver CS4, Adobe has finally gotten around to fixing a lot of CS3 bugs that it never saw fit to fix with a CS3 maintenance upgrade. I don't have any need for the improvements in CS4, and if it weren't for those nasty CS3 bugs that destabilize the program, I'd pass on this upgrade. But here I am, paying for CS4 just to get those bug fixes.

dfs

MacBook Air V2

Regardless of the merits of the MacBook Air versus the MacBook ("Refreshed Air," *Reviews,* February 2009), after my first few hours with the Air, I'd definitely say that solid-state drives are the way of the future. The new 1.86GHz Air model is snappier in every way: the solid-state drive makes boot times and software installation fast (even in Windows XP) and the machine a lot quieter.

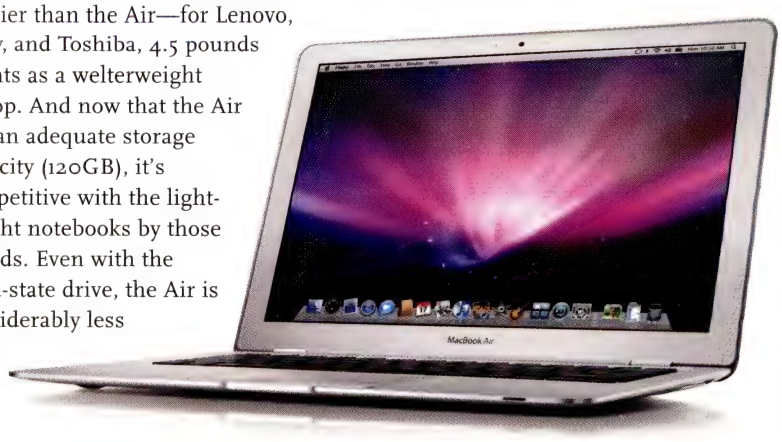
KPO'M

The MacBook is still significantly heavier than the Air—for Lenovo, Sony, and Toshiba, 4.5 pounds counts as a welterweight laptop. And now that the Air has an adequate storage capacity (120GB), it's competitive with the lightweight notebooks by those brands. Even with the solid-state drive, the Air is considerably less expensive than the Lenovo X61 (3.2 pounds, 100GB hard drive, 1GB RAM standard) that my wife purchased last year.

StanA

I'll be interested to see where the MacBook Air is this time next year. Its new Nvidia 9400M chip set on a chip will likely be put to good use running Snow Leopard—perhaps that will make it a more capable, competitive machine. Maybe I'm in the minority here, but I see the Air replacing the MacBook in a couple years, when people give up their internal-disk-drive security blankets and mobile processors get faster.

natmusak



PHOTOGRAPH BY PETER BELANGER

READER POLL

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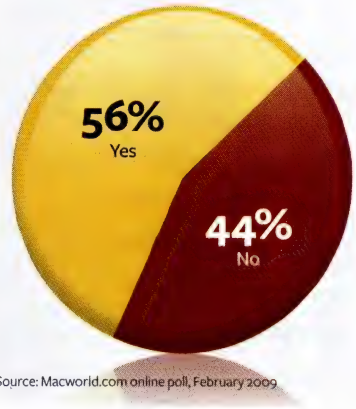

Source: Macworld.com online poll, February 2009

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by Richard Thalheimer

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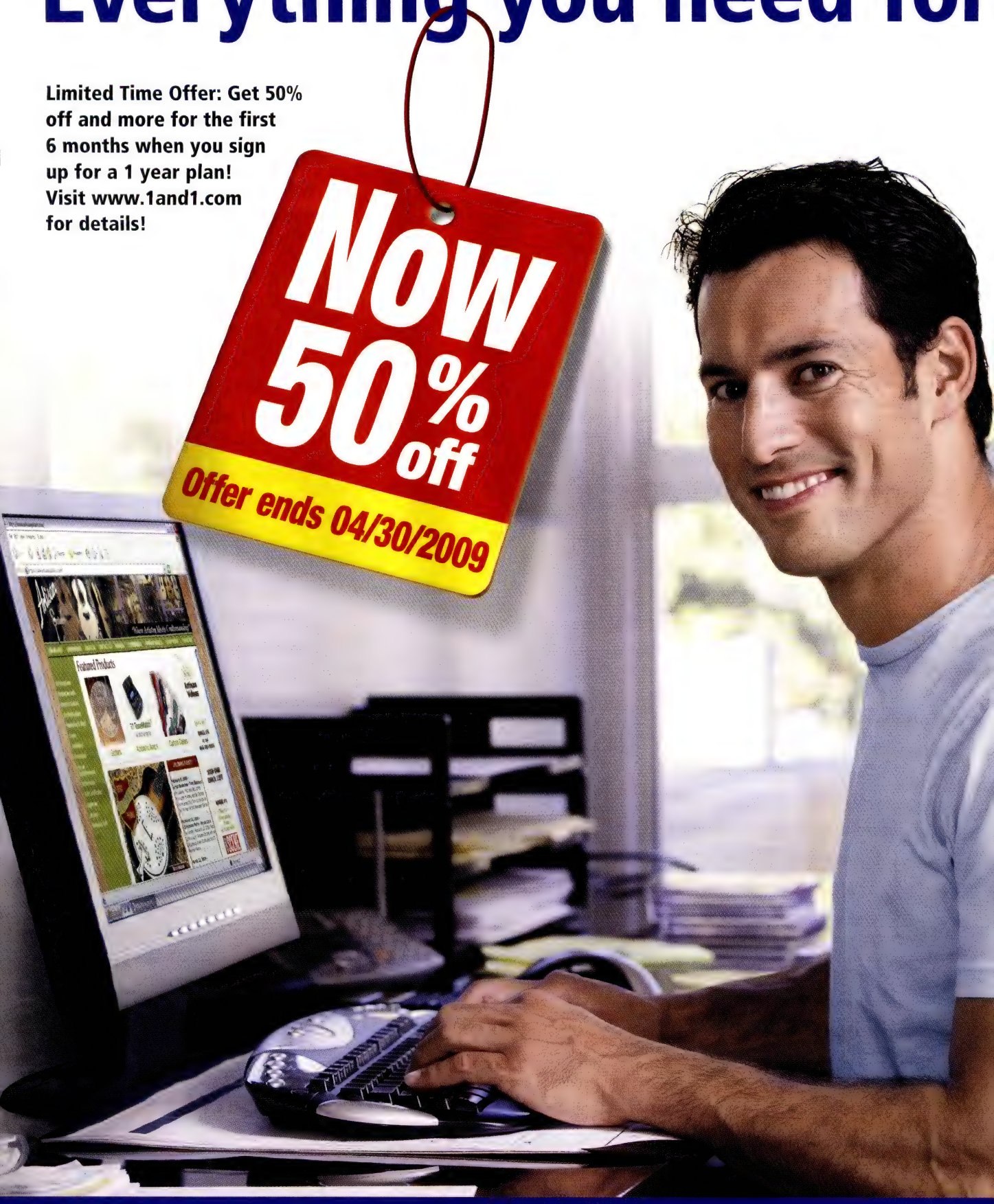

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1&1

MacUser

Top Sites Safari 4 includes a new feature called Top Sites, which gives you a thumbnail view of your most-often-visited Web sites, updated dynamically.

WEB

First Look: Safari 4 Beta

Improvements abound in updated browser **BY ROB GRIFFITHS**

When Apple released a public beta of Safari 4 recently, the company demonstrated not only its commitment to the continued development of its Web browser, but also its willingness to make stark interface changes that give Safari a bold new look. Which of those new features are you most likely to find interesting, useful, or possibly even a bit disruptive?

Speed Increases

The big behind-the-scenes news is the introduction of the superfast Nitro Engine, which executes JavaScript up to 30 times faster than Internet Explorer 7, and three times faster than Firefox 3. To get a sense of the speed increase, I ran a quick test using the SunSpider JavaScript Benchmark on our 2.66GHz iMac with 2GB of RAM. I ran SunSpider in Safari 3, Safari 4 Beta, and Firefox 3.0.6, to measure the speed differences among the browsers.

The results were dramatic—Safari 4 completed the tests in 757ms, versus 2,970ms for Safari 3 and 3,028ms for Firefox 3.0.6. I also tested Firefox 3.1, currently in beta, which has its own advanced JavaScript engine. It was notably faster than Firefox 3.0.6, coming in at 1,419ms, but still well behind Safari 4.

Safari 4 also adds some bleeding-edge Web technologies such as HTML 5's media support (making it easier to add audio and video to Web sites) and offline support (so developers can write Web apps that run even without an Internet connection); CSS effects (which enable animations without requiring Flash or a lot of complex code); and speculative loading (which loads other files needed even when a page runs a JavaScript).

Top Sites

One of the more noticeable changes in Safari 4 is the new Top Sites page, which loads by default when you launch Safari. (You can disable the auto-loading feature in Safari's preferences if you don't like it.) The Top Sites page displays thumb-

nails of your favorite Web sites, which you can easily visit with just one click.

By default, Safari watches the pages you visit most often and then dynamically updates the Top Sites page based on your usage statistics. Safari doesn't count things such as login screens and multiple pages within a domain. But you can also add your own sites to Top Sites.

You can also "pin" a site in place, so that it will always be in the same spot when you load the Top Sites page. Plus, you can rearrange the Top Sites icons and delete unwanted pages. You can also choose from three thumbnail sizes for the Top Sites page—Large mode shows six sites, Medium shows 12, and Small shows a whopping 24 sites.

Top Sites not only offers previews of your favorite sites at a glance, but also lets you know which of those sites have updates—a corner peel with a white star denotes an updated page. Visiting any Top Site is as easy as clicking on one of the icons; the icon will expand to replace the Top Sites page with the clicked page.

Search Improvements

Another feature on the Top Sites page is a search box for querying your surfing history. Click in the search box, and you'll see a Cover Flow–like view of Web pages you've visited. As you type your search terms, the number of displayed sites decreases as sites are eliminated.

Safari 4 not only searches titles and URLs, but also the full text of the pages you've visited. So you don't need to remember something that was in the title or URL of the site you're looking for; any term that was on the page will work just as well.

You'll also see a Cover Flow–like mode while viewing your History or Bookmarks pages; just like in the Finder, Cover Flow in Safari shows thumbnails (of sites, in this case) above the usual listlike view showing the title and URL for each site.

User Interface Changes

Tabs in Safari have moved to the very top of the browser window—in older versions of Safari, they appeared below the bookmarks bar. By putting the tabs in the position where most windows have a title bar, Safari's developers have provided more room for Web page content—an important consideration for laptop users. I expect this new tab location to be one of Safari 4's more-divisive new features (you can undo it with a Terminal command).

Safari 4 adds HTML 5's media support and offline support, CSS effects, and speculative loading.

The URL and Google Search fields have gained serious smarts in this release of Safari. As you type in the URL field, Safari displays a drop-down menu showing what it thinks the best match is; you can load the page for that match at any time by just pressing return. Below the Top Hit, Safari displays two additional sections, showing possible matches from your history and your bookmarks.

The Google Search box also displays a drop-down menu with three sections. The top section displays suggested searches from Google, based on what you've typed so far. The second section displays recent searches that you've run, and the last section (really just one line) shows you the number of matches for your search term on the currently loaded Web page. If you select this last entry, Safari will dim the screen and highlight the items on the page that match your search terms—just as if you'd pressed ⌘-F to use the find-on-page feature.

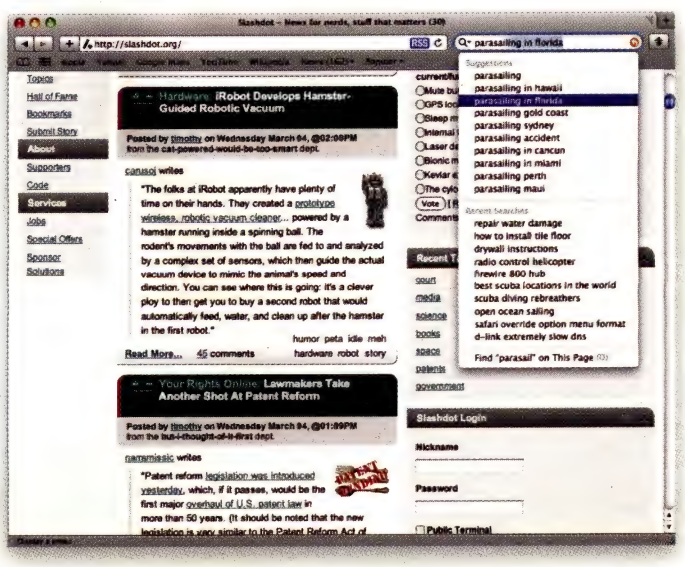
Developer Tools

If you're a Web developer, Safari 4 offers a number of new or improved development tools to help you build effective sites. A full-blown Web inspector lets you see page structure, debug JavaScript, and optimize performance. An Elements inspector lets you view your site's CSS, and even make changes that are then previewed on the page in real time. And a resources panel displays the loading order and time for every element on a page, showing you exactly where a hang-up might be occurring.

First Impressions

While it may take time for some people to adjust to tabs on top of the window, the overall feel of Safari 4 Beta is one of speed and efficiency. The user interface does its best to stay out of your way, and the underlying changes mean that Web sites load quickly and efficiently.

Rob Griffiths is a *Macworld* senior editor; he also runs the MacOSXHints.com Web site.



Updated Search The Google Search Box in Safari 4 now provides a suggestions section, a list of recent searches, and the option to display your search term on the current Web page.

iPHONE

Apple Previews iPhone 3.0 Software

During a special event at the Apple campus in March, the company showed off the next major update to its iPhone operating system, which includes more than 100 new features.

Topping the feature list is the ability for users to copy and paste information—including blocks of HTML and photos—into Apple and third-party apps.

Apple is also adding a landscape orientation to its key applications, providing more space and a larger keyboard for apps such as Mail, Notes, and SMS.

iPhone 3.0 also brings MMS (Multimedia Messaging Service) support for sending and receiving photos, contact information, audio files, and locations; a Voice Memos app to record, edit, and share audio files; Spotlight search capabilites; CalDAV and .ics calendar support; the ability to sync notes via iTunes; stereo A2DP Bluetooth support; autofill; antiphishing technology; and extended parental controls.

Developers also will now be able to build push notification into their apps, to alert you to changes in closed apps—for example, a new instant message. They will also be able to create apps that provide turn-by-turn GPS driving directions (as long as they provide their own maps); embed Google Maps in their apps; sell subscriptions as well as add-ons through their apps; and much more.

Apple cautions that certain features, such as MMS and stereo Bluetooth support, will not work on the original iPhone model.

The iPhone 3.0 software will be available in summer 2009, as a free upgrade for all iPhone users and as a $10 upgrade for all iPod touch users.—**PETER COHEN AND JIM DALRYMPLE**

By the Numbers

77%
Portion of U.S. Mac users who run Microsoft Office, according to Microsoft.

6
Variants of Microsoft's upcoming Windows 7 operating system.

1.6 million
Number of processors in IBM's Sequoia supercomputer, to reside at the Lawrence Livermore National Laboratory.

iPOD

iPod Shuffle Gets Smaller

The iPod shuffle has always been the smallest iPod, but Apple's newest shuffle is now nearly half the size of the previous model—only 1.8 inches tall and 0.3 inch thin.

The new iPod shuffle (read our review at macworld.com/4495) bumps up storage to 4GB and features VoiceOver, which enables the iPod to speak your song titles and artist and playlist names in 14 languages.

Playback and volume controls are now located on the earphone cord itself (third parties have announced headphones and adapters that will be compatible with the new iPod shuffle). And the new shuffle lets you sync multiple playlists.

This tiny iPod comes in silver or black, with a built-in stainless steel clip, for $79 (at press time, Apple was still selling the previous 1GB iPod shuffle for $49).

The iPod shuffle announcement was followed by the release of iTunes 8.1, an update to Apple's jukebox software. In addition to supporting the new shuffle, iTunes now has a Genius sidebar for movie and TV shows; replaces Party Shuffle with iTunes DJ (which you can control with an iPhone or iPod touch); provides iTunes' AutoFill feature for iPods other than the shuffle; lets you use parental controls to block access to the iTunes Store without blocking iTunes U; and makes using large iTunes libraries speedier.—**JIM DALRYMPLE**

PHOTOGRAPHS COURTESY OF APPLE

HARDWARE

Exilim Zoom EX-Z29, from Casio (exilim.casio.com): 10-megapixel camera features 23 shooting modes, digital image stabilization, and a 3x optical zoom ($150).

ATI Radeon HD 4870 Upgrade Kit, Apple (store.apple.com): 512MB video card provides a Mini DisplayPort connector to early-2008 and early-2009 Mac Pro models ($349).

OptiBay Hard Drive, from MCE Technologies (www.mcetech.com): Hard drive replaces the optical disk drive in unibody MacBooks and MacBook Pros (starting at $190).

Phaser 6218MFP, from Xerox (www.office.xerox.com): Multifunction device prints up to 12 color and 16 black-and-white pages per minute and produces 600-by-600-dpi output ($600).

iPod + iTunes News

Everything you need to know about digital music

iPods and iPhones Forbidden at Gates Home

In an interview with *Vogue* (macworld.com/4474), Bill Gates' wife, Melinda, said that Apple products are not welcome in the heavily fortified Gates compound.

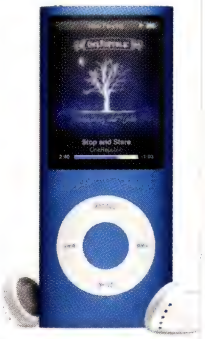
"There are very few things that are on the banned list in our household. But iPods and iPhones are two things we don't get for our kids," she told *Vogue*.

I was about to say that those poor Gates children might feel a little left out when all their peers show up at school sporting the hippest new iPod, while they're just staring at their Zunes. But then I recalled that they arrive at school every morning on talking golden unicorns.

For her part, Mrs. Gates does occasionally find herse[illegible]cumbing to iPhone env[illegible]Every now and then I loo[illegible]my friends and say, 'Oo[illegible]wouldn't mind having t[illegible]t iPhone.'" There's your[illegible]pening, Cupertino.

—DAI[illegible]MOREN

Apple Snags Four iF Design Gold Awards



Although Apple's products seem to keep winning design awards on an almost-daily basis, I'm sure the company is always happy for more. Thankfully, Apple recently took home four International Forum Design (iF) product design awards.

The iF awards have been around since 1954 and are among the most prestigious commendations in the design community. Out of the thousands of products that are submitted, a few hundred are recognized, with even fewer receiving the coveted iF gold award. This year, of the 50 iF gold awards handed down, Apple netted 4, for the iPhone 3G, the second-generation iPod touch, the fourth-generation iPod nano, and the MacBook Air. As a company, Apple itself also ranked second in both iF's creative and company categories, trailing only Samsung.—**DAN MOREN**

Being an American, I don't know much about soccer. But I do know iPods are everywhere. Now, it seems, these two cultural obsessions have found one another—on the soccer pitch.

When Manchester United battled Tottenham Hotspur in Britain's Carling Cup final, the game came down to a penalty shootout. Before defending against penalty kicks, Man U. goalkeeper Ben Foster and his coach huddled to view video of past Spurs penalty kicks on an iPod. Foster credits the iPod with helping him make key saves.

Generally, technology isn't allowed on the field, but governing body FIFA said the iPod was A-OK.—**SCOTT MCNULTY**

NETWORKING

AirPort Extreme and Time Capsule Get Updated

Apple has released new versions of its AirPort Extreme base station and Time Capsule backup device. Both peripherals now feature simultaneous dual-band capability, letting you run 2.4GHz- and 5GHz-band networks at the same time; this means you can use the faster 5GHz band for 802.11n devices while running 802.11g and b devices over 2.4GHz.

The updated peripherals also add Guest Networking, a feature that allows you to create a separate network for visitors (with a separate password) that would let them access only the Internet. That scenario lets you keep all your shared printers, drives, and other devices, as well as shared libraries, out of the reach of guests.

The Time Capsule boasts an enhancement of its own—the ability for MobileMe subscribers with Mac OS X 10.5 (Leopard) to access the contents of the device's hard drive over the Internet.

Prices for these products are unchanged—$179 for the AirPort Extreme, and $299 (500GB) or $499 (1TB) for the Time Capsule.—**AAYUSH ARYA**

GATES PHOTOGRAPH COURTESY OF BILL AND MELINDA GATES FOUNDATION; SOCCER PHOTOGRAPH BY AFP PHOTO/GLYN KIRK; IPOD AND AIRPORT EXTREME PHOTOGRAPHS COURTESY OF APPLE

PRODUCT WATCH

HARDWARE

ShareSpace, from Western Digital (www.westerndigital.com): Four-bay network storage RAID appliance now comes in an 8TB version ($1,700).

tvTray, from H-Squared (www.h-sq.com): Wall mount designed for the Apple TV is compatible with VESA-standard mounting hardware ($50).

SOFTWARE

CheckUp 2.1, from App4Mac (www.app4mac.com): Updated diagnostic utility improves the interface and adds support for RAID disks (about $24.50; upgrade, free).

FlickrExport 3, from Connected Flow (www.connectedflow.com): iPhoto Flickr export plug-in now lets users sort photos, add photos to multiple groups, and import GPS information (£12; upgrade, £6).

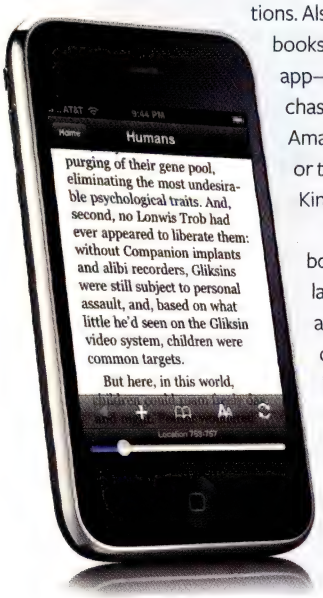
iPHONE

Amazon Brings Kindle to the iPhone

Not long after releasing the second incarnation of its Kindle e-book reader, Amazon.com started offering iPhone users the ability to read more than 240,000 Kindle-formatted books from Amazon's e-book library through the free Kindle for iPhone app.

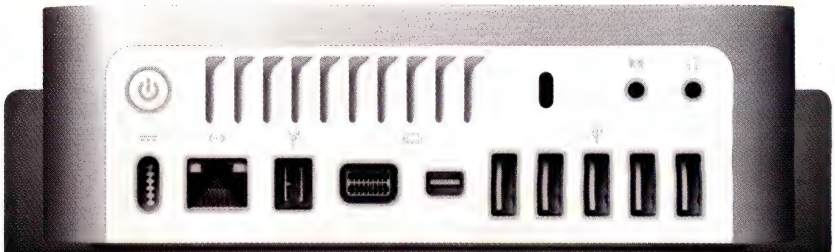
Here's what Kindle for iPhone offers: you can access all the Kindle e-books in your Amazon account, and download and store them on your iPhone or iPod touch for later reading. The Kindle app also syncs your place in a book to Amazon's servers, allowing you to switch between the iPhone and Kindle hardware—if you also have a Kindle—without losing track of where you are.

There are some catches, however: Kindle for iPhone supports only books, not newspaper or magazine subscriptions. Also, you can't buy books from within the app—you must purchase them through Amazon's Web site or through the Kindle hardware.



Still, for avid book readers who lack a Kindle, this app will vastly increase the number of books commercially available on the iPhone.

—JASON SNELL



HARDWARE

Don't Worry: FireWire Is FireWire

One notable aspect of Apple's recent hardware announcements was the fact that the Mac mini's FireWire 400 port was being replaced by a FireWire 800 port, and that all iMacs would use FireWire 800 only. Besides increasing performance, this change signals the death of FireWire 400 in Apple hardware. (OK, so the low-end, previous-generation MacBook still has a FireWire 400 port, but Apple's new hardware is FireWire 800 only.)

Although some people welcome this as an opportunity to pay their final respects to FireWire 400, more than a few Mac users are worried that the FireWire 800 port has made their older FireWire 400 peripherals obsolete.

Fret not. FireWire 800 is backward-compatible with all FireWire 400 peripherals. All you need is a way to connect those peripherals to the newer port. You can solve this problem with any of a number of inexpensive cables and adapters. WiebeTech (www.wiebetech.com), for example, sells FireWire 800-to-400 cables for $11, and Sonnet Technologies (www.sonnettech.com) sells a small, $15 adapter for plugging FireWire 400 cables into FireWire 800 ports. If even those products are too expensive, Monoprice.com sells FireWire 800-to-400 cables for as little as $4. Similar solutions are available for connecting 4-pin FireWire 400 devices to FireWire 800 ones.

It's worth noting that if you have both FireWire 400 and 800 devices, you should put your FireWire 400 devices at the end of your FireWire chain, connecting FireWire 800 devices directly to your Mac and to each other. Putting FireWire 400 devices in between your Mac and your 800 devices will slow down those faster devices.—DAN FRAKES

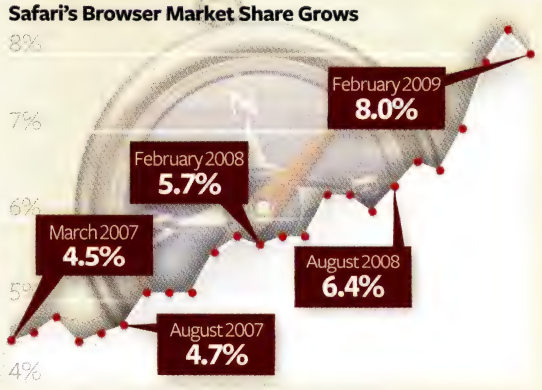
iPHONE PHOTOGRAPH AND FIREWIRE PHOTOGRAPH BY PETER BELANGER

Tech Trends

Safari Surges

In the past two years, Safari has accounted for 8 percent of the Web browsers accessing sites around the world—an increase of about 77 percent. During the same period, Internet Explorer's standing dropped 14 percent to 67 percent, and Firefox's grew 44 percent to a 22 percent share.—MARYANN JONES THOMPSON

Safari's Browser Market Share Grows



Source: Net Applications

SOFTWARE

Fliq 2.0, from Mark/Space (www.getfliq.com): Sharing utility lets you send tasks from iCal, as well as files and documents, over a network ($20; upgrade, free).

iBank 3.4, from IGG Software (www.iggsoftware.com): Updated financial management software offers improved migration of Quicken data formatted in QIF ($60; update, free).

iClipboard 2, from Chronos (www.chronosnet.com): Clipboard manager adds rapid-fire pasting feature and access to the app from the Finder's menu bar, among other changes ($30; upgrade, $15).

ScreenFlow 1.5, from Telestream (www.telestream.net): Screen-recording application now lets you add titles and audio effects to videos ($99; update, free).

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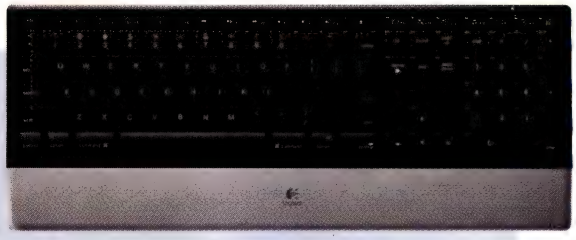
Hot Stuff

What we're raving about this month

ClickToFlash

The Web is rife with content created using Adobe Flash. Besides being distracting, Flash can slow down your browser and eat up your Mac's memory. If you surf in Safari under Leopard, ClickToFlash—a free plug-in for Apple's browser—can help. It replaces the Flash parts of your Web-browsing experience with boxes marked "Flash." Click on any box once to activate that Flash item (github.com/rentzsch/clicktoflash). See our Mac Gems blog for more details (macworld.com/4467).—**DAN MOREN**

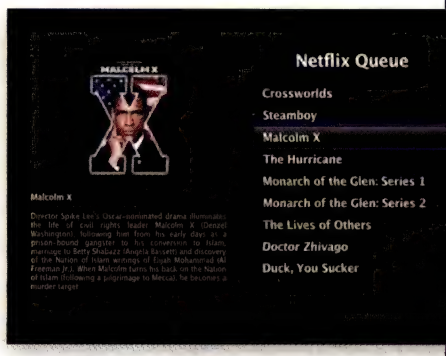
DiNovo Keyboard Mac Edition



Logitech's $100 diNovo Mac Edition uses the same standout key technology that makes the Eddy-award-winning diNovo *Edge* Mac Edition (★★★★½; macworld.com/3974) so appealing, but instead of the Edge's touch-sensitive scroll pad and volume slider, there is a traditional numeric keypad. The standard diNovo also provides more programmable F-keys (13), uses RF wireless in lieu of Bluetooth, has a full complement of Mac-specific keys, and has a low profile and superb key feel for comfortable typing. Add in Logitech's claim that the keyboard can run off one set of batteries for up to *three years*, and the diNovo makes for one attractive package (www.logitech.com).—**DAN FRAKES**

F.lux

As important as brightness is, it isn't the only factor that determines how comfortable it is to stare at a computer screen. Stereopsis's free f.lux automatically adjusts your display's color temperature depending on the time of day. During the day, it mimics a sunlight-like tint, while at night it goes for a warmer tone. Although f.lux may not be suitable for all users—especially those doing color-sensitive work—it might make things easier on the eyes (stereopsis.com/flux).—**DAN MOREN**



Understudy

Services like Hulu and Netflix make viewing streaming Internet video on your computer easy, but there's not always a convenient way to watch that content from the comfort of your couch. If you don't mind hooking up your Mac to your TV, check out Understudy. This free software package hooks into OS X's Front Row feature and adds the ability to stream video content from both Hulu and Netflix. Understudy allows you to add movies and television shows from the two services, and it even integrates with your own accounts so you can browse your Netflix Instant Queue or your Hulu subscriptions. Understudy is still very clearly in development, so there are some behavioral quirks, but it's a promising prospect for making streaming video more accessible in the living room (macworld.com/4466).—**DAN MOREN**

The Tony Maserati Collection

The newest set of plug-ins from Waves Audio, the Tony Maserati Collection, upholds the company's reputation for quality. Mixing engineer Tony Maserati has worked with some of the biggest names in music, including Sting and David Bowie. This plug-in set will improve the sound of your mix instantly. Simply adjust the sensitivity dial until the plug-in's light turns yellow or green—if it's red, you've gone too far. The $800 package has six plug-ins: one each for electric guitar, bass, vocals, drums, acoustic guitar, and a harmonics generator (www.waves.com).—**JIM DALRYMPLE**

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- Heather Clancy, ZDNet.com

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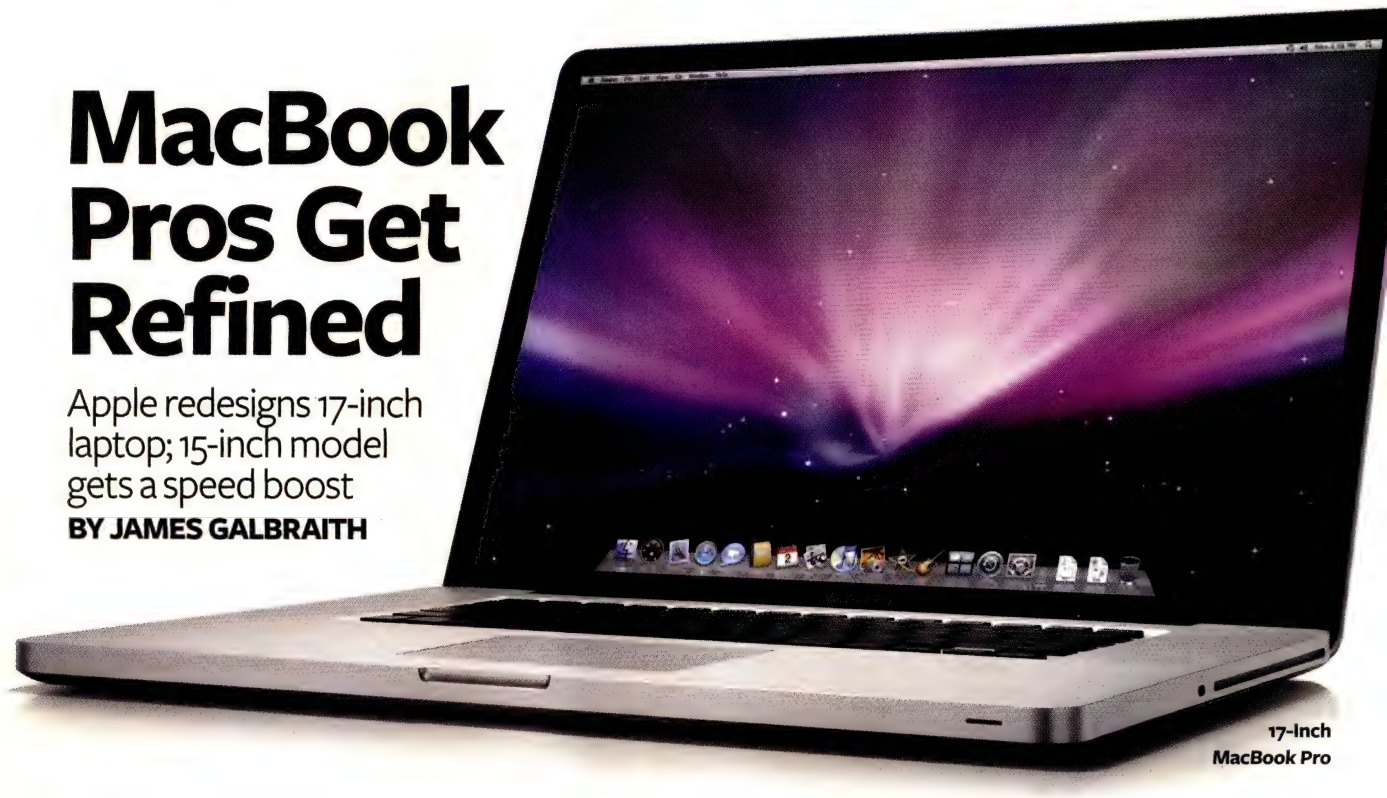
MacBook Pros Get Refined

Apple redesigns 17-inch laptop; 15-inch model gets a speed boost

BY JAMES GALBRAITH



17-Inch MacBook Pro

Apple recently released a pair of updated MacBook Pro models. The new 17-inch 2.66GHz MacBook Pro, announced at Macworld Expo in January, is the last Apple laptop to get a unibody makeover. It also features an innovative new battery design. Apple released a new 15-inch 2.66GHz MacBook Pro as well, to replace the 15-inch 2.53GHz MacBook Pro (4½; macworld.com/4189).

2.66GHz 17-Inch MacBook Pro

The new 17-inch MacBook Pro comes standard with a 2.66GHz Intel Core 2 Duo processor, 6MB of Level 2 cache, a 1,066MHz frontside bus, 4GB of DDR3 RAM running at 1,066MHz, and a 5,400-rpm 320GB hard drive.

Like all of the unibody laptops, the 17-inch MacBook Pro uses an environmentally friendly widescreen display with mercury-free LED backlighting and arsenic-free glass. The standard model comes with a glossy screen that has a native resolution of 1,920 by 1,200 pixels. Glossy screens can look great, producing vibrant colors and deep, rich blacks. However, some people despise the glare from these highly reflective screens. For those gloss-phobic folks, Apple offers an antiglare option for $50.

Like the 15-inch MacBook Pros, the new 17-inch MacBook Pro features a dual graphics subsystem—a high-performance Nvidia GeForce 9600M GT chip with 512MB of dedicated GDDR3 memory, as well as a lower-performing, battery-saving Nvidia GeForce 9400M that shares 256MB of RAM with the main processor. The previous 17-inch MacBook Pro had a single graphics engine, the Nvidia GeForce 8600M GT, with its own 512MB of GDDR3 memory. In our testing we found that the 9600M GT graphics offered a significant boost over the 9400M; the 9600M GT was 45 percent faster in our Quake tests and 18 percent faster in our Unreal Tournament tests.

Bigger, Better Battery

The big story with the new 17-inch MacBook Pro is its battery. Apple says the new laptop's battery can last for up to 8 hours on a single charge. But Apple made the controversial decision to make the battery fixed—it's not user replaceable. Apple says that not having to include the latches and other parts necessary in a removable battery made it possible to increase the battery's size so it can carry more juice. Apple also says that the battery's new adaptive charging technology allows it to be drained and charged at least 1,000 times before performing at only 80 percent of its original capacity—that's between three and five times as many charges as with most Apple laptop batteries.

Our standard battery-life test involves looping a video from a ripped DVD and saving it to the hard drive. In that test the new 17-inch MacBook Pro lasted 4 hours and 43 minutes, while the previous 17-inch MacBook Pro lasted 3 hours and 36 minutes.

PHOTOGRAPHS BY PETER BELANGER; SUMMARY PHOTOGRAPHS COURTESY OF APPLE

Our next battery test resembles the wireless productivity tests Apple uses for its battery life estimates; we surfed the Web and worked on office productivity apps. We were able to work for just over 7 hours before the laptop entered its safe sleep state, about an hour short of the 8-hour battery life claim. That's impressive. The older 17-inch MacBook Pro lasted a mere 4 hours and 46 minutes.

2.66GHz 15-Inch MacBook Pro

Aside from the small boost in processor speed, the new 2.66GHz 15-inch MacBook Pro is identical in every way to its 15-inch 2.53GHz predecessor. It comes with 6MB of shared L2 cache, 4GB of DDR3 RAM, a 5,400-rpm 320GB hard drive, and the dual Nvidia graphics setup. You get this setup for the same $2,499 price as for the 2.53GHz model.

Benchmarks

With the faster processor, the 17-inch 2.66GHz MacBook Pro slightly outperformed its predecessor, the 17-inch 2.5GHz MacBook Pro (●●●●; macworld.com/4259). The new system was about 2 percent faster in our all-around system performance tool, Speedmark 5. Most of the two systems' test results, however—including those for Photoshop, iMovie, and iTunes—were within a second or two of each other.

When you compare the processors' rated speeds, the new 15-inch 2.66GHz MacBook Pro's processor is about 5 percent faster than the one in the 15-inch 2.53GHz MacBook Pro. That's almost exactly the difference in Speedmark scores between the two 15-inch MacBook Pros. The biggest speed improvements were, predictably, in processor-intensive tests such as our Cinema4D and Compressor tests, where the 2.66GHz MacBook Pro shaved 4 or 5 seconds off the time of the 2.53GHz model.

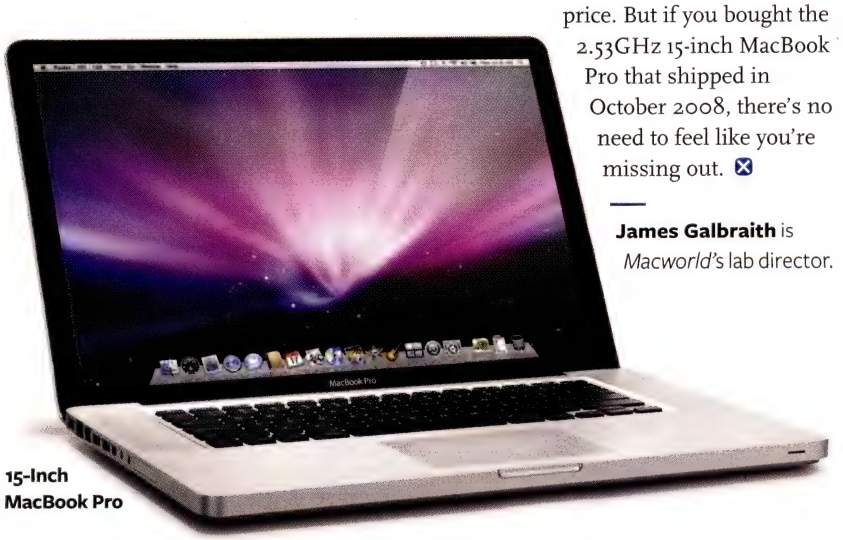
Interestingly, the new 15-inch MacBook Pro is a bit faster than the new 17-inch model, although they have the same 2.66GHz processor. The new 15-inch model posted a Speedmark score that was 11 points (5 percent) higher than the new 17-inch model's. In many of our additional tests, the 15-inch model was 1 or 2 seconds faster than the 17-inch model, and it was 4 seconds faster in our Unzip Archive test, and 6 seconds faster in our Compressor test.

Macworld's Buying Advice

The new 17-inch MacBook Pro has a lot going for it, and its new battery makes it a winner. Plus, it's the only Apple laptop with a $50 antiglare option.

As for the new 2.66GHz 15-inch MacBook Pro, you get a speed boost over the previous top-of-the-line 2.53GHz 15-inch MacBook Pro without a boost in price. But if you bought the 2.53GHz 15-inch MacBook Pro that shipped in October 2008, there's no need to feel like you're missing out.

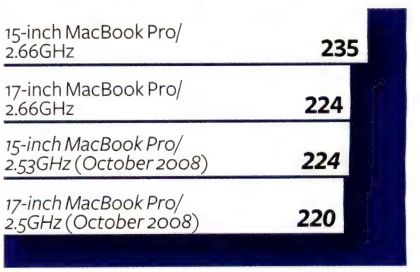
James Galbraith is *Macworld*'s lab director.



15-Inch MacBook Pro

Macworld Lab Test

Speedmark 5 Test Results



Longer is better. Reference systems are in *italics*. Speedmark 5 scores are relative to those of a 1.5GHz Core Solo Mac mini, which is assigned a score of 100. All systems were running Mac OS X 10.5.6, with 4GB of RAM.—MACWORLD LAB TESTING BY JAMES GALBRAITH, CHRIS HOLT, AND HELEN WILLIAMSON

For complete benchmark test results, please visit macworld.com/ **4468**

17-inch MacBook Pro Core 2 Duo/ 2.66GHz

●●●●

PROS: Thin, rounded design; large trackpad with numerous multitouch-gesture choices; great new keyboard; longer battery life than predecessor; only Apple laptop with antiglare option.

CONS: Battery is no longer user replaceable; trackpad button can be hard to press; no video adapters or Apple Remote in the box.

COMPANY: Apple, www.apple.com

PRICE: $2,799

FULL REVIEW: macworld.com/4469

15-inch MacBook Pro Core 2 Duo/ 2.66GHz

●●●●

PROS: Thin, rounded design; ecologically conscious; gorgeous bright, glossy screen; large trackpad with numerous multitouch-gesture choices; great new keyboard.

CONS: No choice of screen finishes; trackpad button can be hard to press; some multitouch gestures more difficult to maneuver than others; no video adapters or Apple Remote in the box.

COMPANY: Apple, www.apple.com

PRICE: $2,499

FULL REVIEW: macworld.com/4470

Road Tripper

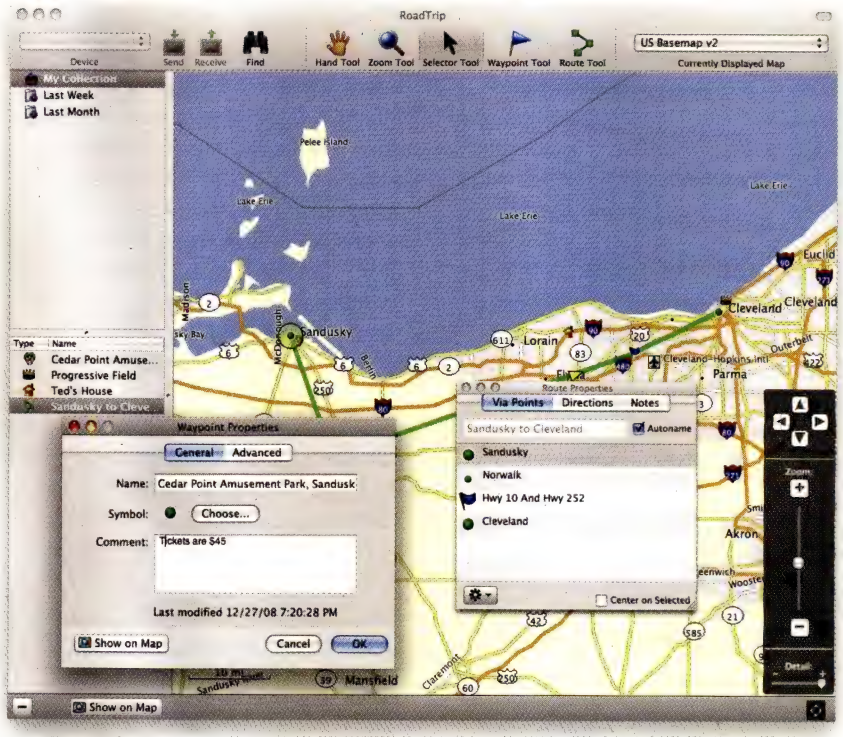
Mac GPS software traces your jaunt from desktop to open road

BY TED WALLINGFORD

An old saying about road trips is "Somewhere—anywhere—is better than here." Road-tripping in the United States emerged with the invention of the interstate highway system; and for the last several decades, a road-tripper's best partner has been a good street atlas.

Times have changed. Global Positioning System (GPS) technology is sending atlases the way of the dodo. GPS can help you plan a trip, track your progress, and adjust to unexpected events along the way, whether you're cruising to work or hiking through the Grand Canyon.

Hitting the road with a GPS navigator suction-cupped to your windshield is empowering. Since all auto navigators include a map, a compass, and a path superimposed onto the map indicating precisely where to drive, the fear of getting lost evaporates. Roughly the same holds true when using a GPS navigator for off-road travel such as camping, hiking, biking, and boating.



Excellent Trip Planner In tandem with the nüvi 880 navigator (or other Garmin GPS devices), Garmin's RoadTrip application provides great tools for planning routes and reviewing the trips you've recorded.

Key Elements

The Mac GPS experience involves three elements: a hardware-based GPS receiver, Mac mapping software, and you, the traveler. Until recently, it was common practice to connect a GPS receiver to your Mac laptop and interact with maps on your display via a software tool like DeLorme Street Atlas. Today, many GPS devices, such as those from Magellan, Garmin, and TomTom, offer a full suite of built-in maps and a built-in display to boot. So there's no need to tote your MacBook around to explore new terrain.

Just the same, Mac software makes it easy to manage the data on a TomTom,

Home 2.5.2

3 hands

PROS: Good asset manager for maps, routes, and voices; lets you purchase and share content.

CONS: Changing voices can be glitchy; no Mac trip-planning software included.

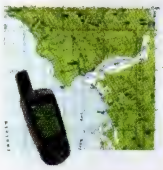
OS COMPATIBILITY: 10.4 (Tiger), 10.5 (Leopard)

PRICE: free with TomTom GPS hardware

COMPANY: TomTom, www.tomtom.com

FULL REVIEW: macworld.com/4402

MacGPS Pro 8.3



3½ hands

PROS: Supports bitmapped maps; transfers track logs from handheld devices.

CONS: Tough learning curve.

OS COMPATIBILITY: 10.4 (Tiger), 10.5 (Leopard)

PRICE: $60 (download)

COMPANY: James Associates, www.macgpspro.com

FULL REVIEW: macworld.com/4399

RoadTrip 2.0.1

4 hands

PROS Stable; easy to organize an abundance of waypoints.

CONS: Works only with Garmin GPS devices; can't print maps.

OS COMPATIBILITY: 10.4 (Tiger), 10.5 (Leopard)

PRICE: free

COMPANY: Garmin, www.garmin.com

FULL REVIEW: macworld.com/4400

Garmin, or USGlobalSat GPS unit, and these companies offer Mac OS X–friendly software for managing the map data and preference settings on their GPS devices. TomTom Home 2.5.2 software lets you load updated map data such as points of interest and, if you want, human voices for the receiver's prompts, as well as update its internal operating software. Garmin lets Mac users command and control their GPS receivers in a similar manner through its OS X–compatible MapInstall and POI (Points of Interest) Loader software.

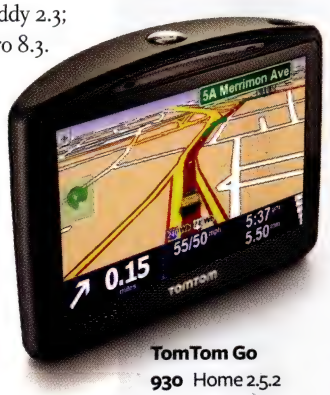
We look at four Mac-compatible GPS programs, two of them accompanied by representative hardware units: Garmin's Road Trip 2.0.1, which we tested with a Garmin nüvi 880 (recently discontinued); TomTom Home 2.5.2, which we tested with a TomTom Go 930; RouteBuddy 2.3; and James Associates' MacGPS Pro 8.3. These GPS programs are not directly comparable in all functions, nor are they appropriate for all scenarios. Your choice depends on your travel plans.

Most GPS devices exchange data with the Mac via a USB cable or Bluetooth.

Before and After a Trip

Although automotive and handheld navigators are ideal for strategizing trip planning and recording points of interest while you're traveling, Mac software can help with route planning and post-trip analysis.

Garmin's RoadTrip is the best application for trip planning, route comparison,



TomTom Go 930 Home 2.5.2 software lets you manage maps, media, and points of interest on a Go 930.

GPS: The Inside Track

So you venture out on an exciting cross-country road trip, armed with your favorite atlas, when suddenly you discover that your directions are dead wrong and you're hopelessly off course. Or perhaps you bring home a few hundred digital photos and find yourself wondering, "Hmm, did I take this picture in Santa Fe or Taos?" If you're navigationally challenged, GPS products can help you avoid getting lost. If you're an experienced traveler who never gets lost, GPS products can guide you through traffic delays, help you catalog your miles on land and sea, or even prevent speeding tickets.

How GPS Works

Orbiting the earth are 31 satellites that radio positioning signals to devices on the planet below. These devices, including the ones from TomTom, Garmin, USGlobalSat, and Magellan, as well as the iPhone 3G, can interpret these radio signals to determine where on earth those devices are located—and plot that location on an interactive map.

A GPS navigation device's basic function, regardless of its intended use, is to find your geographic location. For example, real estate surveyors employ GPS to locate the exact boundaries of parcels. The technology provides navigation assistance for air pilots, too. Some wristwatch-style devices combine GPS, pedometers, and biofeedback sensors, giving runners and cyclists data about their workout routines.

GPS has evolved a slew of other innovations that make use of geo-mapping data, such as geo-tagging. This permits the iPhone and other GPS-equipped mobile camera-phones to save location data with snapped photos, allowing users to determine exactly where they took each picture. Some GPS-enabled software programs, like Loopt for the iPhone (www.loopt.com), allow you to see your friends' locations by transmitting GPS data from their iPhones over the Internet to a Web server.

Geo-caching, a social phenomenon that involves racing to locate items placed at specific coordinates on the Earth, has recently become popular. Cache hunt sites such as www.geocaching.com let users post the geographic locations of caches—physical items placed at a specific spot, so that other users can find them.

With Mac software like MacGPS Pro and RouteBuddy, sailing enthusiasts, hikers, and mountain bikers can use handheld GPS receivers to catalog their journeys and record points of interest (called waypoints). Once home, users can review the distances, speeds, elevations, and waypoints overlaid on a variety of digital maps—topographical, highway, or maritime.

Three Types of Devices

There are three varieties of GPS navigation devices: receivers, handheld GPSs, and automotive navigators (or mobile GPSs). Receivers are antennae that feed GPS data to another device, usually a computer, but lack a display or controls. Handheld GPSs, popular among hikers, campers, and sports enthusiasts of all kinds, combine a GPS receiver with an LCD map display, a compass, and controls for navigation systems. Auto navigators have an LCD screen for showing maps and usually also a touch interface to accept the driver's input. These devices facilitate trip planning with site-to-site route finding and a map that tracks the vehicle's location as it travels from one point to the next along the route. Some even have traffic advisories, road-construction and lane-closure warnings, and other features to help you deal with unexpected events during your travels.

Handheld GPS Use your Mac and a handheld GPS navigator to plan and catalog your trips.

RouteBuddy 2.3

1½

PROS: Great route creation and editing; supports many formats.

CONS: Can't link waypoints or tracks to iPhoto events; no street addresses.

OS COMPATIBILITY: 10.4 (Tiger), 10.5 (Leopard)

PRICE: $100

COMPANY: RouteBuddy, www.routebuddy.com

FULL REVIEW: macworld.com/4401

PHOTOGRAPHS BY PETER BELANGER

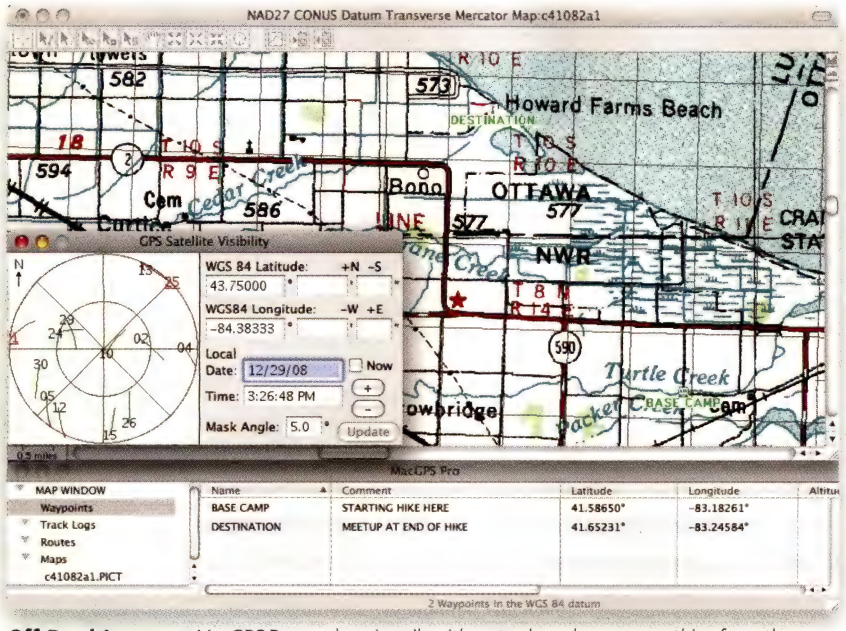
taking notes about waypoints (places of special interest) and trip events, and reviewing the speeds, times, elevations, and coordinates of your travels. RoadTrip is a free download. Even without a GPS device, this program is useful for trip planning, but it supports only Garmin's hardware.

RoadTrip works with the maps that power Garmin's GPS navigators, so the maps on your Mac's screen and those on your GPS behave the same way. Establishing routes, tagging waypoints, and measuring distances in RoadTrip are intuitive processes. The program's filtering scheme, which resembles that of iTunes' smart folders, helps you view collections of waypoint marks.

One big shortcoming of RoadTrip is its inability to print maps. This impediment, and the program's incompatibility with non-Garmin receivers, may propel you to one of two other Mac GPS software alternatives: MacGPS Pro and RouteBuddy.

Analyzing Your Travels RouteBuddy can grab a track log from your GPS and let you examine the altitude and speed between points on your journey.

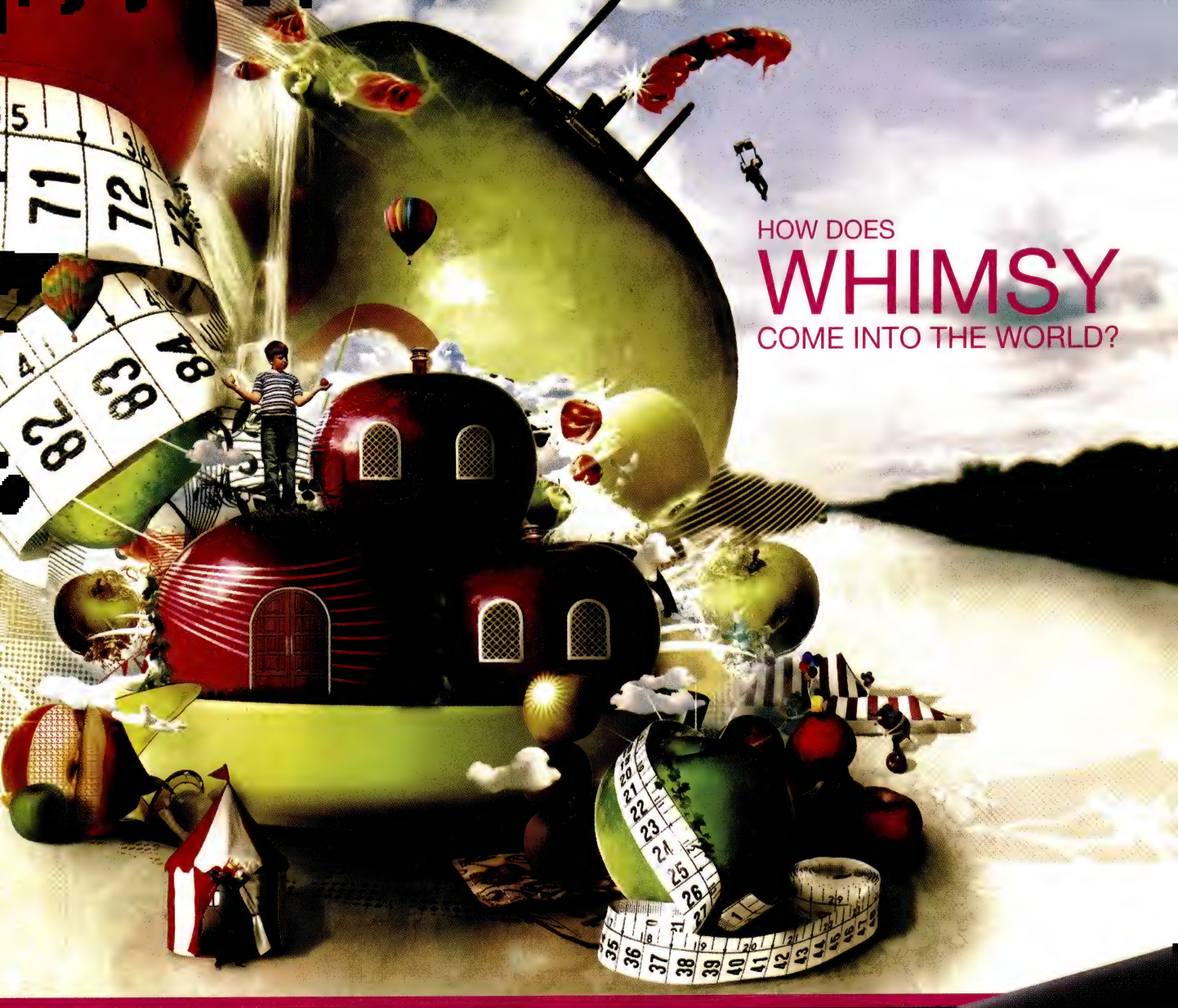
MacGPS Pro primarily uses standard raster-image maps (scans of hand-drawn or printed maps), such as those produced by the U.S. Geological Survey, in addition to certain vector-image maps. The difference is distinct. Vector-image maps, like those employed by RoadTrip, RouteBuddy, Google, and iPhone Maps, allow zooming in to display more detail and zooming out to display less, with no degradation in visual quality. Raster-image maps, like those supplied for use with MacGPS Pro, are digital photos of printed maps and don't allow extreme zooming. This means you'll have to pack your GPS device with several copies of the same geographic region at different scales.



Off-Road Journeys MacGPS Pro works primarily with raster-based maps—anything from those produced by the U.S. Geological Survey and the National Oceanographic and Atmospheric Agency to maps you draw and scan in yourself.

While it's not the easiest program to learn, and it offers fewer route-planning options than its competitors because of its off-road focus, MacGPS Pro does sport a set of serious travel-logging features. It can import track logs (logs of the places you've been during your trip), routes, and waypoints from a variety of handheld GPS devices. When you import a waypoint from your GPS device into MacGPS Pro, you can attach a file to it—handy if you have a digital photograph of the waypoint's location, or if you use a program like Microsoft Word for notes. Outdoors enthusiasts, explorers, and scientific users will be right at home with MacGPS Pro because it's the only Mac mapping program that includes acreage, nautical mileage, and other specialized units of measure.

RouteBuddy is a streamlined map-exploration program geared specifically to road trips. Its gorgeous vector maps are on a par with the quality of Google Maps or MapQuest. RouteBuddy is a handy, artfully designed tool for creating routes or comparing potential routes. It can also handle in-motion navigation—tracking your current position the way an automotive navigator does—when a GPS receiver is connected to the Mac. You can add waypoints and track logs to your RouteBuddy maps as you travel and



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then analyze your movements and stops later. RouteBuddy is well suited for road travel, while MacGPS Pro is better for hiking and geographic exploration.

From One GPS to Another

All GPS navigation devices have common data-storage needs. They all store waypoints, routes, and tracks. Since different geographical applications employ different data formats for storing such data, it can be difficult to move this information from one brand's GPS device to another. The same is true for moving data between Web-based geographical information services—say, from Google Maps to MapQuest.

This is where RouteBuddy is helpful. It can import and export most of the important geographical data formats. These include Google KML, Garmin GPX, and the TomTom-specific Itinerary and POI formats—for routes and points of interest, respectively. RouteBuddy can save you some aggravation by simplifying the transfer of data from one GPS device to another, or from one geographical information service to another.

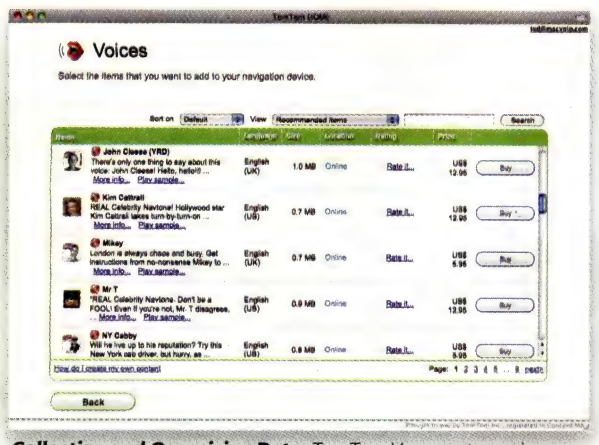
TomTom owners who need to move such information between different brands of receivers will have to rely on a third-party tool like RouteBuddy, since TomTom Home software isn't suitable for mapping or routing. Indeed, TomTom Home is intended for the installation of maps, community-submitted map corrections, languages, and voices, as well as subscriptions to optional services like TomTom's Google-based local search interface. While the program can install community-shared routes from TomTom's Web site on your receiver, it doesn't allow you to create your own.

In contrast, RoadTrip is a complete mapping program that includes map display, search, notation, route creation, and two tools to manage map data on the GPS, MapInstall and POI Loader.

Mac GPS software can help with two major travel-related duties: route planning and post-trip analysis.

Macworld's Buying Advice

Travelers will discover how much more enjoyable trips are with Mac software to plan, route, and catalog excursions. RoadTrip 2.0.1 is an ideal program, but if you don't have a Garmin GPS or don't want to get bogged down in endless navigational options, RouteBuddy 2.3 is a fantastic choice. It's easy and works with a ton of GPS devices. If your travels are more exploration-oriented or scientific, choose MacGPS Pro 8.3. And if you have a TomTom device, and all you need is maps, route-sharing information, and subscription-based services such as traffic information and safety cameras, the free TomTom Home 2.5.2 is there for you.

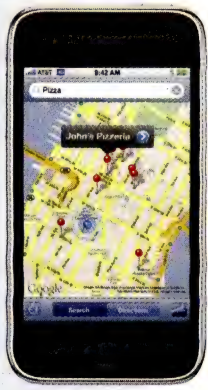


Collecting and Organizing Data TomTom Home puts you in charge of the Go 930 navigator's voice customization. Thanks to TomTom, you can now get directions from Mr. T.

Ted Wallingford is the CEO of Best Technology Strategy in Cleveland, Ohio, and the author of *Switching to VoIP* and *VoIP Hacks* (O'Reilly Media, 2005).

iPhone GPS: All You Need?

With the iPhone 3G's built-in GPS receiver and big, bright touch screen, navigation is a natural fit. Folks can take advantage of its built-in Maps application, which provides turn-by-turn directions and location tracking. The iPhone 3G's navigation utilities differ from those offered by automotive GPS navigators such as a TomTom or a Garmin. The iPhone's search features use Google maps. Getting a list of search results on a map is a breeze on the iPhone, while doing so on a TomTom or Garmin is slower. Since the iPhone is always connected to the Internet, you can download maps and satellite imagery on-the-fly, while a dedicated navigator requires that you transfer certain maps and images from a computer.



However, in terms of travel guidance, the iPhone 3G still has a long way to go compared with an automotive GPS. Navigators such as some Garmin models offer spoken prompts and advanced lane guidance to keep the driver's eyes on the road.

iPod touch owners get the same map-search capability as iPhone users, but instead of GPS location, the iPod touch uses "best guess" technology to ascertain your current location based on your Wi-Fi connection's IP address. But it's not very accurate.

First-generation iPhones don't give GPS perks either. But for $10, Navizon Premium (www.navizon.com) equips older iPhones with location awareness, using a technique that's similar to what an iPod touch uses. Known as *peer to peer wireless positioning*, Navizon's method uses the known GPS locations of cell towers to estimate your location to within a few hundred square yards. This should suffice for occasional road navigation.

PHOTOGRAPH COURTESY OF APPLE

*iPhone not included

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Time
o 4.5 hours on 3G
o 9 hours on 2G

Internet Use
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Up to 5.4 hours onWi-Fi

Standby Time
Up to 20 hours

Audio Playback
Up to 6 hours

Video Playback
Up to 270 hours

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macworld.com/reviews

What we're reviewing online this month

SOFTWARE

Aquaria 1.1 △

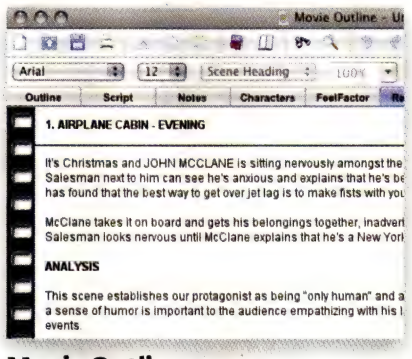
RATING: ★★★★ **PRICE:** $30 **COMPANY:** Ambrosia Software **URL:** www.ambrosiasw.com

Aquaria is an undersea adventure game where you must guide a water nymph named Naija to unravel the mystery of the underwater world of Aquaria. The level design favors labyrinths and discovery over linear stages. Each successive level carries new dangers and challenges, and for a game that's based purely underwater, the environments are remarkably varied. At moments in the game, you truly appreciate how well crafted it is; some of the later areas are shrouded in darkness, and Naija must use her body like a flashlight to see the way—a clever method that spices up game play (macworld.com/4451).

Black and White 2 △

RATING: ★★★½ **PRICE:** $50 **COMPANY:** Feral Interactive **URL:** www.feralinteractive.com

In this god simulation game, how you treat your worshippers determines your power and supernatural prowess. As the game begins, a "pure prayer" beckons you to return to your tribe of Greeks. You find that the Aztecs are ransacking your people's city, and through the course of the game you must reestablish the tribe's livelihood. In practicality, Black and White 2 is one part city simulator, one part real-time strategy game, and, oddly enough, one part pet simulator. The amalgam of genres is not as awkward as it sounds, but the result is a game that is both clever and frustrating (macworld.com/4452).



Movie Outline 3.0.5 △

RATING: ★★★½ **PRICE:** $215 **COMPANY:** Movie Outline Software **URL:** www.movieoutline.com

Nearly every good screenplay starts with a solid outline, and Movie Outline 3.0.5 aims to set itself apart from the screenwriting-software pack by focusing on this vital prewriting phase of the process. The program has an intuitive interface, and the integrated outlining and character tools are helpful for beginners. Movie Outline also has a built-in reference library that provides story-structure snapshots of 12 major films. The software, however, lacks many features available in competing screenwriting software (macworld.com/4457).

Painter 11

RATING: ★★★★½ **PRICE:** $429 **COMPANY:** Corel **URL:** www.corel.com

The best software just keeps getting better, and in the case of Painter 11, it's even gotten a little faster. Users of the previous version will see a marked increase in speed, as well as 40 new Natural-Media brushes, more-intuitive brush customization, resizable Colors and Mixer palettes, PNG support, and a ton of other time-saving features. Corel has tweaked Painter 11's workspace in various ways—the interface color is consistent, the Colors palette is now resizable, the Transform tools have been relocated to a more intuitive home, and more. Also new in Painter 11 is a color-proofing option that lets you simulate how your art will look when printed with various profiles like U.S. Sheetfed (coated or not), U.S. Web Coated (SWOP), and so on (macworld.com/4459).

Suitcase Fusion 2 △

RATING: ★★★★ **PRICE:** $100 **COMPANY:** Extensis **URL:** www.extensis.com

Extensis has entirely rewritten this professional font-management utility designed for individual users, using code borrowed from its Universal Type Server product. The result is increased speed and responsiveness—especially for adding and auto-activating fonts. You can preview any selection of active or inactive fonts in several sample layouts, or by typing a line of your own text. Then you can drag type samples from the Suitcase window and float them over your page layouts to see how they'd look (macworld.com/4460).

Find It Online

For expanded reviews, type the blue URL at the end of each summary into your browser's address bar.

HARDWARE

E-30

RATING: 4½ **PRICE:** body only, $1,300 **COMPANY:** Olympus **URL:** www.olympusamerica.com

This digital single-lens reflex (SLR) has a handful of surprising new features that serious photographers will find quite useful. The new Digital Leveler detects the camera's pitch and roll and indicates it in the viewfinder, making it easier to square up your shots. The six Art Filters include Pop Art, Soft Focus, Pale and Light Color, Light Tone, Grainy Film, and Pin Hole, and the camera applies them as you shoot a picture. The Multiple Exposure function allows you to place up to four captures in one file so you can combine different elements into a single image (macworld.com/4453).

EOS 5D Mark II

RATING: 4½ **PRICE:** body only, $2,699 **COMPANY:** Canon **URL:** www.usa.canon.com

The successor to Canon's popular EOS

5D digital SLR camera, the EOS 5D Mark II features small but significant design changes. The 3-inch LCD is a 920,000-dot VGA display, a great improvement over previous Canon LCDs. The camera's Mode dial (which you use to select a shooting mode) now includes three custom modes; you can configure the camera any way you want. When it comes to image quality, the EOS 5D Mark II still has that special something its predecessor had, plus all of the advantages that a full-frame sensor offers and great high-ISO performance (macworld.com/4454).

NeatReceipts for Mac

RATING: 4 **PRICE:** $200 **COMPANY:** The Neat Company **URL:** www.neatco.com

NeatReceipts for Mac lets you scan receipts, business cards, and other documents, automatically extract data from them, and then store that data in the included NeatWorks program or export it to programs such as Address Book, Quicken, Excel, and Numbers. Its optical character recognition capability is quite good, and the device always recognized totals and dates from receipts, though it was not quite as successful at finding and handling specific information, such as the amount of sales tax paid or the name of the business (macworld.com/4458).

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MacBook Pro Anti-Glare Film

RATING: ●●●½ **PRICE:** $35 **COMPANY:** Power Support **URL:** www.powersupportusa.com

If you're tired of the glare on your new MacBook Pro, the MacBook Pro Anti-Glare Film offers a solution. You apply this sheet of film to the laptop's glossy screen, transforming it into an antiglare screen. Success with the Anti-Glare Film hinges almost entirely on how well you apply it. If you're lucky and/or good at it, the film drops onto the screen and sticks perfectly, free of air bubbles or other visual problems—a task that's harder than it sounds. With the antiglare film in place, the MacBook Pro's reflectivity is more like the pre-unibody MacBook Pro's matte display (macworld.com/4455).

2GHz MacBook (White)

RATING: ●●●● **PRICE:** $999 **COMPANY:** Apple **URL:** www.apple.com

While Apple's MacBook (●●●●; macworld.com/4061) and MacBook Pro (●●●●; macworld.com/4062) laptops have been reengineered to include an all-aluminum unibody design, one lone polycarbonate model remains. It now features an Nvidia GeForce 9400M graphics subsystem, a major upgrade over the Intel GMA X3100 graphics used in the previous white MacBook. In fact, the new Nvidia-powered MacBook can display nearly four times as many frames per second in our Quake tests as the last-generation model with its Intel graphics (macworld.com/4397).

MACBOOK PHOTOGRAPH COURTESY OF APPLE

MFC-790CW

RATING: ●●●½ **PRICE:** $180 **COMPANY:** Brother **URL:** www.brother-usa.com

This multifunction device has a color ink-jet printer, a flatbed scanner, an automatic document feeder for copying and scanning, a 50-sheet printer tray, a built-in answering machine, and a telephone headset. The device performed our ten-page Word test in 3 minutes and 28 seconds, slower than most competing multifunction printers. The color printing speed was more impressive; it took the MFC-790CW a little over 50 seconds to finish a 22MB photo in Photoshop (macworld.com/4456).

Macworld iPhone App Showcase

Advertisement

Zeptoliner

Importing text or OPML files from web to iPhone, composing long sentences into drop-down menus, and sending the note immediately via e-mail. All of them become easy with this outliner.

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"BEST PHOTO FILTER TOOL - 4.5/5" MACWORLD

RemoteTap

Macworld ●●●●

RemoteTap is a new remote desktop management approach for the Mac. It supports audio, window autofocus, magnifying glass, one touch application launch/hide/quit, and much more.

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App Store Selections

iPhone and iPod touch software that's caught our eye

GAMES

Days of Thunder 1.0.1

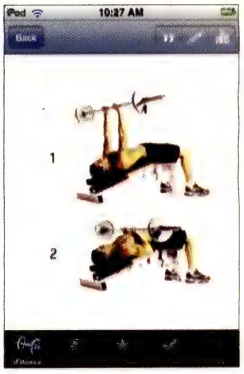
RATING: 4½ **PRICE:** $3 **COMPANY:** Freeverse **URL:** macworld.com/4429

Tom Cruise's 1990 stock-car flick didn't leave much of a cinematic mark, but it did inspire this enjoyable racing game. It's not very realistic, but that's part of the fun—you get nearly as great a boost from making rival racers explode into flames as you do from winning races (macworld.com/4430).—**ROB GRIFFITHS**

LIFESTYLE

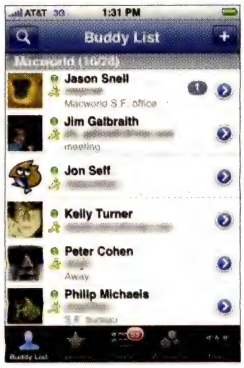
iFitness 8.9

RATING: 4½ **PRICE:** $2 **COMPANY:** Medical Productions **URL:** macworld.com/4431



Using iFitness can be a great help to newbie gym-goers, thanks to the app's simple graphics and instructions for more than 150 exercises. Tap on an exercise—iFitness lists each one by muscle group, by muscle, or alphabetically—and you get images that show how to do it correctly. You can even keep a log of your workout data. Frequent updates improve on what is already a compact and surprisingly thorough app (macworld.com/4432).

—**JEFF MERRON**



CHAT

BeejiveIM 2.0.1

RATING: 4 **PRICE:** $16 **COMPANY:** Beejive **URL:** macworld.com/4437

This full-featured IM client boasts talents that almost put it on a par with desktop chat apps. The unintuitive interface frustrates, but handy features such as extensive file-transfer capabilities and a landscape mode make BeejiveIM a good choice for power chatters (macworld.com/4438).

—**DAN MOREN**

PRODUCTIVITY

Stage Hand 1.5.4

RATING: 4½ **PRICE:** $8 **COMPANY:** Wooji Juice **URL:** macworld.com/4433

Apple's $1 Keynote Remote app for controlling Keynote presentations from your iPhone or iPod touch suffers from some limitations. In contrast, Stage Hand has features aplenty. With the help of a free desktop app that manages the connection between your Mac and your mobile device, Stage Hand works in both portrait and landscape views, has previous-slide and next-slide buttons, and includes Keynote's Presenter Display to show you everything you'd see in the same view on your Mac (macworld.com/4434).—**ROB GRIFFITHS**

GAMES

SimCity 1.4.0

RATING: 3½ **PRICE:** $6 **COMPANY:** Electronic Arts **URL:** macworld.com/4435

The venerable city-building game SimCity appears on the iPhone and iPod touch, but the transition to Apple's mobile devices is not an entirely smooth one. Some of SimCity's finer details lead to long load times, and an included tutorial isn't as helpful as it could be. Still, many of the old-school charms remain intact, making this a solid and addictive strategy game (macworld.com/4436).—**CHRIS HOLT**

More Reviews

See more iPhone and iPod touch apps we've tested at iPhone Central (macworld.com/4164).

APPLICATION	DESCRIPTION	PRICE	RATING	FIND CODE*
Attendance 1.4 David M. Reed Software	Attendance tracker	$3	4	4439
Grocery iQ 1.0.6 Free State Labs	Shopping list manager	$1	4	4440
InchCalc+ 1.4 River Studio	Construction calculator	$5	4	4441
Milog 1.4 SimplySoft	Mileage tracker	$5	3½	4442
Spreadsheet 1.3 Softalk	Spreadsheet app	$6	3½	4443

*Typing a find code after *macworld.com/* in your browser's address field directs you to a product's review or overview. For example, macworld.com/4439 takes you to our review of Attendance.

Top Products

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CAMCORDERS
High Definition

PRODUCT	RATING	PRICE	TYPE	FIND CODE
Vixia HV30 (pictured) www.canon.com	★★★★	$579	MiniDV	3708
HDR-SR11 Handycam www.sony.com	★★★★	$984	hard drive, Memory Stick	3731
Zi6 www.kodak.com	★★★★	$150	mini camcorder	4074

HARD DRIVES
Desktop and Portable

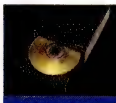
PRODUCT	RATING	PRICE	TYPE	FIND CODE
Mercury On-the-Go (pictured) www.macsales.com	★★★★½	$125	portable	4258
FreeAgent Desk www.seagate.com	★★★★	$160	desktop	4167
My Book Studio Edition www.westerndigital.com	★★★★½	$150	desktop	3295

SCANNERS
Document and Flatbed

PRODUCT	RATING	PRICE	TYPE	FIND CODE
ScanSnap S510M (pictured) www.fujitsu.com	★★★★½	$366	document	3321
Perfection V300 Photo www.epson.com	★★★★	$98	flatbed	4071

DIGITAL CAMERAS
Point-and-Shoot

PRODUCT	RATING	PRICE	TYPE	FIND CODE
Casio EX-z250 (pictured) www.casio.com	★★★★	$167	9.1-megapixel	4256
PowerShot SD880 IS www.canon.com	★★★★	$247	10-megapixel	4257



DVD BURNERS
Desktop and Portable

PRODUCT	RATING	PRICE	TYPE	FIND CODE
Portable DVD±RW w/ LightScribe (pictured) www.lacie.com	★★★★	$100	portable	3878
d2 DVD±RW w/ LightScribe www.lacie.com	★★★★	$70	desktop	3900

Multifunction Printers: PIXMA MX850

RATING: ★★★★½ **PRICE:** $180 **COMPANY:** Canon **URL:** www.canon.com **FIND CODE:** 3593

Why We Like It:

The MX850 combines the impressive photo quality of an ink-jet printer with the five-color text capabilities of low-cost laser printers. The printer has plenty of features that small businesses will appreciate, such as an automatic document feeder for the copier, a duplexer for printing double-sided documents, and a fax machine. It also has memory-card slots and a 4,800-by-9,600-dpi scanner, and it comes with PictBridge software.

PHOTOGRAPH BY PETER BELANGER

Printer Shopping Guide

- A printer may seem affordable when you look at the base price, but you need to factor in the price of consumables like ink and paper.
- If multiple computers will share the printer, then invest in a printer with networking capabilities.
- If you want to make it easier to print images from your digital camera, consider a printer that has the ability to read memory cards and produce high-quality photos.
- For scanning and printing photos, be sure to invest in a printer with a flatbed scanner.

ALSO CONSIDER: Stylus Photo RX680; ★★★★½; $152; macworld.com/3458 | **Photosmart C7280 MFP**; ★★★★; $190; macworld.com/3581

TOP PRODUCTS are those we've recently reviewed in a comparison of like products. As new products become available, we'll update this list. For longer reviews of these products and for other product recommendations, go to macworld.com/reviews. All prices are the best current prices taken from a PriceGrabber survey of retailers as of March 17, 2009. **FIND CODES:** In a browser's address field, typing in find codes after *macworld.com/* quickly takes you to a product's review or overview. For example, you can find our review of the Pixma MX850 at macworld.com/3593.

MONITORS
Widescreen

PRODUCT	RATING	PRICE	TYPE	FIND CODE
324 LCD (pictured) www.lacie.com	4½	$830	24-inch display	3896
LP3065 www.hp.com	4	$1,145	30-inch display	2509
MultiSync 3090WQXI www.necdisplay.com	4½	$2,173	30-inch display	3770

DIGITAL CAMERAS
SLR

PRODUCT	RATING	PRICE	TYPE	FIND CODE
EOS Rebel XSi (pictured) www.canon.com	4½	$575	12-megapixel	3898
D40 DSLR www.nikonusa.com	4	$430	6.1-megapixel	2498
D300 DSLR www.nikonusa.com	4½	$1,354	12.3-megapixel	3434

PRINTERS
Laser

PRODUCT	RATING	PRICE	TYPE	FIND CODE
Oki C6150dn (pictured) www.okidata.com	4½	$729	LED; color	3899
HL-4070CDW www.brother-usa.com	4½	$411	PostScript compatible	3385
Lexmark C544dn www.lexmark.com	4½	$345	LED; color	4356

PRINTERS
Ink-Jet

PRODUCT	RATING	PRICE	TYPE	FIND CODE
PictureMate Zoom PM 290 (pictured) www.epson.com	4½	$161	compact; photo	3102
HP Deskjet D2545 www.hp.com	3½	$56	inexpensive; general purpose	4067
Stylus Photo R1900 www.epson.com	4½	$520	professional photo quality	3649

APPLE Macs

PRODUCT	SPECS	RATING	PRICE	DISPLAY	SPEEDMARK 5*	FIND CODE
DESKTOP						
iMac	Intel Core 2 Duo/2.66GHz	3½	$1,200	20 inches	256	4482
	Intel Core 2 Duo/2.66GHz	4	$1,490	24 inches	270	4483
	Intel Core 2 Duo/2.93GHz	4	$1,794	24 inches	297	4484
	Intel Core 2 Duo/3.06GHz	4	$2,199	24 inches	308	4485
Mac mini	Intel Core 2 Duo/2GHz (120GB hard drive)	4	$579	not included	189	4486
	Intel Core 2 Duo/2GHz (320GB hard drive)	3½	$769	not included	202	4487
Mac Pro	Intel Xeon/quad-core 2.66GHz	4½	$2,499	not included	348	4488
	Intel Xeon/two quad-core 2.26GHz	4	$3,299	not included	343	4503
PORTABLE						
MacBook	Intel Core 2 Duo/2GHz (white)	4	$999	13 inches	186	4397
	Intel Core 2 Duo/2GHz	4	$1,299	13 inches	195	4186
	Intel Core 2 Duo/2.4GHz	4	$1,475	13 inches	212	4187
MacBook Air	Intel Core 2 Duo/1.6GHz	3½	$1,288	13 inches	153	4191
	Intel Core 2 Duo/1.86GHz	3½	$2,399	13 inches	174	4192
MacBook Pro	Intel Core 2 Duo/2.4GHz	4	$1,850	15 inches	215	4188
	Intel Core 2 Duo/2.66GHz	4	$2,499	15 inches	235	4489
	Intel Core 2 Duo/2.66GHz	4	$2,799	17 inches	224	4490

*Speedmark 5 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.5 (Leopard). For information on Speedmark testing, go to www.macworld.com/speedmark.

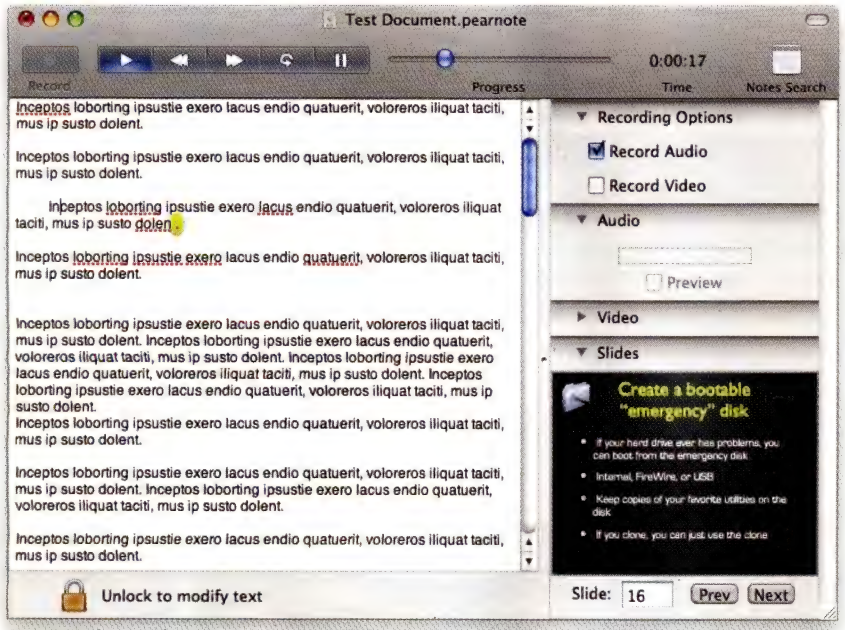
APPLE iPods

PRODUCT	SPECS	RATING	PRICE[A]	DISPLAY	PERFORMANCE	FIND CODE
iPODS						
iPod classic	120GB	4	$209	2.5-inch color	36 hours of music playback; 6 hours of video playback	3863
iPod touch	8GB	4	$215	3.5-inch color	36 hours of music playback; 6 hours of video playback	3864
	16GB	4	$244	3.5-inch color	36 hours of music playback; 6 hours of video playback	3865
	32GB	4	$339	3.5-inch color	36 hours of music playback; 6 hours of video playback	3866
iPod nano	8GB	4½	$121	2-inch color	24 hours of music playback; 4 hours of video playback	3867
	16GB	4½	$173	2-inch color	24 hours of music playback; 4 hours of video playback	3868
iPod shuffle[B]	4GB	4	$79	none	10 hours of music playback	4491
iPHONE						
iPhone 3G	8GB	4	$199	3.5-inch color	5 hours of 3G Internet; 5 hours of 3G talk time	4184
	16GB	4	$299	3.5-inch color	5 hours of 3G Internet; 5 hours of 3G talk time	4491

[A] iPod shuffle prices are from a PriceGrabber survey of retailers as of March 17, 2009. [B] Apple is still also selling the 1GB iPod shuffle model.

Mac Gems

Discover great, low-cost Mac products **BY DAN FRAKES**



Synchronized Skimming Pear Note synchronizes your note-taking and recording of an event, making it easy to review either one.

PRODUCTIVITY

Pear Note 1.1.2

RATING: 3½ **PRICE:** $40 **COMPANY:** Useful Fruit Software **URL:** www.usefulfruit.com

When you're taking notes and recording audio from a presentation, class, or other event, syncing your notes with the recording can help you better understand the information. Pear Note is a clever program that lets you take notes while it records audio or video, and then combines your notes and media.

What's *really* special about Pear Note is that it tracks your notes along with the media. Specifically, it tracks the exact time in the recording when you typed each character. When you play back your recording, Pear Note highlights the letter you typed. You can skip to any part of the recording and see the notes you were taking at the time.

Even more useful, this process also works the other way around: if while reading through your notes you realize that you missed something that was said or shown, simply click on that place in the text; Pear Note then automatically skips to that moment in the recording, letting you watch or listen to the desired portion of the event without having to find it manually.

You can also use Pear Note to record an event, and then add your notes at a later time; the program will synchronize those notes with the recording. You can even import a QuickTime-supported audio or video file recorded elsewhere and then type notes as you listen or watch.

Finally, if you're watching a presentation and the presenter has provided you with Keynote, PowerPoint, or PDF slides ahead of time, you can load those slides into Pear Note. When you advance the slides in Pear Note during the presentation, Pear Note adds these slide advances to the recording timeline along with your notes. During playback, clicking within your notes or moving directly to a particular part of the recording will display the slide that was shown at that time; conversely, you can switch directly to a slide in Pear Note to immediately hear the audio, or see the video, that went with it.

Pear Note's outlining capabilities are somewhat limited, and a few minor issues keep it from being a must-have note-taking tool, but it's a unique program that many people will find useful.

AUDIO

Textcast 1.0.2

RATING: 3½ **PRICE:** $25 **COMPANY:** Bit Maki Software **URL:** www.bitmaki.com

Textcast is a nifty utility that lets you turn text-based information into podcast files handled by iTunes and synced to your iPod or iPhone.

You can manually create a new podcast episode by entering a name for the episode and then typing or pasting in the text you want your Mac to read out loud. Click on the Sync To iTunes button, and Textcast uses Leopard's high-quality Alex voice to read the text of each new episode, creates an audio file of that reading, and then transfers the resulting audio file to iTunes. Each Textcast file—a podcast consisting of one or more episodes—shows up as a separate podcast in iTunes; each audio file is a separate episode in that podcast.

Textcast also provides several features for automating the process of getting text into the program. For example, if you're reading an article in Safari and you click on Textcast's Import Safari button, Textcast creates a new episode containing the text of that Web page. You can also add an RSS feed directly to Textcast; when you launch

Signal Problems?

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Bring Signal into your Home, Office, Car or Personal Workspace with zBoost ®, the award-winning line of cell phone signal boosters

zBoost extending cell zones By Wi-Ex.com

Solve Your Signal Problems at
www.Wi-Ex.com/z/MW509
and get **20% off**
zBoost Signal Boosters until 6/1/09

the program or manually refresh the RSS feed, Textcast downloads any new articles in that feed and creates podcast episodes for each of them. This is most useful with feeds that provide the full text of articles.

Textcast's text-to-audio conversions are surprisingly fast, and the program allows you to adjust the reading speed without affecting the voice's pitch. On the other hand, the Alex voice still sounds robotic, and Textcast works best with English.

PRODUCTIVITY

TaskPaper 2.1

RATING: ★★★★ **PRICE:** $30 **COMPANY:** Hog Bay Software **URL:** www.hogbaysoftware.com

Somewhere in the appealing middle ground between too-basic to-do-list programs and overly complex project-management software sits TaskPaper, a task manager that's fast, easy to use, and very flexible. The program doesn't have any complex formatting buttons and menus; it has only a single pop-up menu for creating new projects (lists), tasks (items in a list), and notes. You use the tab key to create hierarchical lists, and you rearrange items by simply dragging any item's bullet to a different location in your document.

Incipio Lloyd iPod Mic

Most dockable iPods let you use a third-party microphone accessory to record audio. But most of these accessories cost $50 to $70; if you've got a fourth-generation (4G) nano, which costs as little as $149, that's a good chunk of what you paid for your iPod. Provided you don't need to record in stereo, Incipio's Lloyd (★★★★½; macworld.com/4428) is a veritable bargain at just $18. A tiny mono microphone that plugs into the AV (headphone) jack on the bottom of your 4G nano, the Lloyd is almost exactly the same width as the nano itself and ever so slightly thicker, complementing the iPod's shape while surpassing its length by only half an inch.

With the Lloyd connected, you use the nano's built-in Voice Memos software to make and manage recordings. The Lloyd's performance is surprisingly good: while it's clearly designed for basic voice recordings, within reasonable distances the results are loud, clear, and natural sounding. This mic is well designed, offers great performance for the price, and is compact enough to squeeze into the smallest of pockets. If you want a low-cost way to take advantage of your iPod nano's voice-recording feature, look no further.

Tiny Mic, Big Value Record audio on your iPod nano with an affordable Lloyd.

PHOTOGRAPH BY PETER BELANGER

Your iPhone* Idea to Ca$h Flow in 3 Steps

1 Bring your iPhone application idea to Zco
2 Zco develops, deploys** & supports your app
3 Sit back and collect monthly checks

CMMI Certified Global Facilities

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Zco

20 years of providing high quality service

www.zco.com 603.881.9200

*We custom develop Windows, Mac, iPhone, Blackberry and Android software
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You do the talking.

Speech recognition so good, about the only thing it can't do speak for you.

Macworld BEST OF SHOW 2008

MacSpeech Dictate

Speech Recognition for Mac OS X

www.macspeech.com

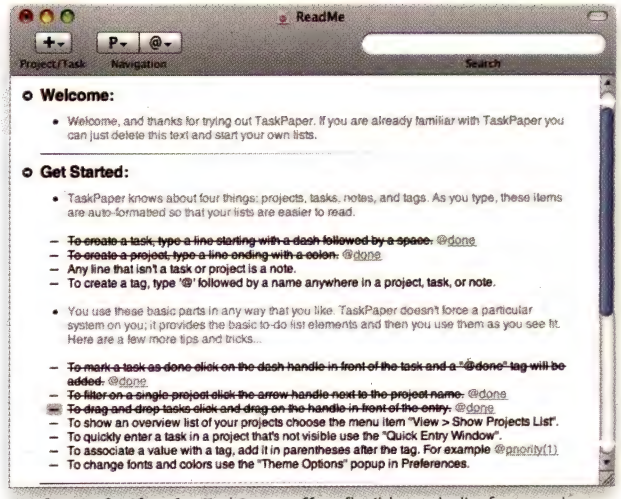
MacSpeech

Available from MacSpeech, Apple, and other fine Macintosh retailers.
Visit the MacSpeech website for a complete retailer listing.

You can add tags to items to designate priority, status, project, or—for Getting Things Done fans—context; clicking on any tag displays just those items with that tag. TaskPaper also offers several useful ways to view your lists: all at once, one at a time, or using Safari-like tabs.

A unique aspect of TaskPaper is that you can format items using simple text characters: an item with a colon (:) at the end automatically becomes a header. Items beginning with a dash and a space (-) become tasks. All other items are notes. To add a tag to an item, simply type **`@tagname`** at the end. In other words, you can compose, format, and manage your lists without taking your fingers off the keyboard.

One other thing about TaskPaper is impressive: beneath the surface of its attractive interface, TaskPaper's documents are simple text files, viewable in any text editor or word processor. A project name is just text followed by a colon; an item marked as complete is simply text followed by *@done*. TaskPaper interprets those characters to produce its formatted version, so your documents aren't trapped in a proprietary format. You can transfer a TaskPaper document to any other device that can handle plain-text files, and you'll retain full access to the document. Conversely, you can create and edit task lists in any text editor: follow TaskPaper's formatting rules, and that text file will appear as an attractive project document when opened in TaskPaper.



Tasks Made Simple TaskPaper offers flexible to-do-list features in a clean interface, and you can edit its text-based files in any text editor.

TaskPaper doesn't provide due dates, schedules, or many of the advanced project-management features of programs such as Things or OmniFocus, but it does have an impressive combination of simplicity and flexibility.

Senior Editor **Dan Frakes** is always looking for great, low-cost products. Send your comments and suggestions to macgems@macworld.com.

DESKTOP INVASION!

WE REVIEW APPLE'S LATEST iMACS, MAC MINIS, AND MAC PROS

New Macs have landed. From consumer level to pro, Mac aficionados get a revitalized slate of choices. On March 3, Apple replaced its entire line of aging desktop systems with two new Mac minis, four new iMacs, and two new Mac Pro towers—and in most cases, the new model prices are roughly comparable to that of their predecessors. Gamers, graphic designers, video experts, students, and everyday Mac users will likely find something to cheer about with these new upgrades. *Macworld* put each machine through rigorous tests, and we present our results and recommendations in the reviews that follow.

PHOTOGRAPHY BY PETER BELANGER

Finder File Edit View Go Window Help
Fri 9:46 AM

iMAC

Apple's most popular desktop Mac is more powerful than ever

BY ROMAN LOYOLA

Apple seems to be happy with releasing iMac updates once per calendar year. The new iMacs replace models that were released ten months ago, which seems like an eternity in technology. And before that, there was an eight-month gap between iMac updates. However, the new iMacs feature significant changes that boost performance.

Changes Inside

This is the third generation of the aluminum iMac, and the design hasn't changed much since its introduction in 2007. The gray bezel, the black Apple logos on the front and back, the aluminum stand, the matte black plastic backing—it's all there, including the big glossy screen (much to the chagrin of matte-screen fans, there is no antiglare screen option).

Apple offers four standard configurations of the iMac—three 24-inch models and one 20-inch iMac. The iMacs have the same TFT active-matrix LCDs as before, and the 20-inch LCD is 1,680 by 1,050 pixels, a 6-bit color display that achieves millions of colors by dithering. It's marred by a narrow viewing angle and increased color shifting. At 1,920 by 1,200 pixels, the LCDs on the 24-inch models are 8-bit displays.

Behind the glossy screen lie all the changes, and they result in a performance boost that reinforces the iMac's value. The standard iMac configurations sport Core 2 Duo processors at 2.66GHz, 2.93GHz, and 3.06GHz. The previous iMac generation had Core 2 Duo processors at 2.4GHz, 2.66GHz, 2.8GHz, and a built-to-order 3.06GHz.

The system bus, which facilitates communications between the processor and system memory, is still at 1,066MHz, but now Apple uses 1,066MHz DDR3 RAM instead of the 800MHz DDR2 RAM that was in the previous-generation iMacs. In addition to a processor performance boost, this bump in RAM speed also contributes to the impressive speed results the new iMac lineup demonstrated. Apple also doubled the amount of RAM in the iMac, with 2GB in the 2.66GHz 20-inch model, and 4GB in all the 24-inch models.

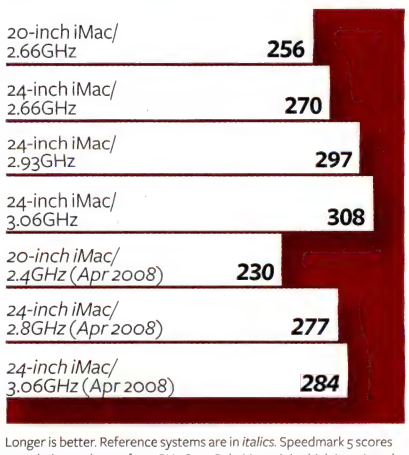
The hard drives in the new standard iMac configurations have a higher capacity, too. Previously, the entry-level iMac had a 250GB drive and the other models had 320GB drives. Now, the entry-level iMac has a 320GB drive, the high-end iMac has a 1TB drive, and the two models in between have 640GB drives.

The iMacs no longer use ATI video cards. The two 2.66GHz iMacs use Nvidia's GeForce 9400M, which shares 256MB of memory with the CPU. The 2.93GHz iMac uses Nvidia's GeForce GT 120, and the 3.06GHz iMac uses Nvidia's GeForce GT 130; those two iMacs have 256MB and 512MB of dedicated video memory, respectively. For users—especially for artists, designers, and, of course, gamers—that means better performance in graphics-intensive apps.

Apple made two major changes regarding the ports on the back of the iMac. First, the FireWire 400 port has been replaced by a USB 2.0 port, bringing the total number of USB ports

MACWORLD LAB TEST

Speedmark 5 Test Results



Longer is better. Reference systems are in *italics*. Speedmark 5 scores are relative to those of a 1.5GHz Core Solo Mac mini, which is assigned a score of 100. All systems were running Mac OS X 10.5.6, with the 20-inch iMacs outfitted with 2GB of RAM, and the 24-inch iMacs with 4GB.—MACWORLD LAB TESTING BY JAMES GALBRAITH, CHRIS HOLT, AND HELEN WILLIAMSON

on the back of the iMac to four. The FireWire 800 port is still there, so you can use a FireWire 400–to–FireWire 800 adapter cable to connect your FireWire 400–based peripherals to the machine. The second change is that the mini-DVI port for connecting an external display has been replaced by a Mini DisplayPort. You can connect a DVI-equipped display by using—you guessed it—an adapter, such as Apple's Mini DisplayPort to DVI ($29; macworld.com/4502).

The final major change is with the keyboard. The iMac now comes with a compact wired keyboard that doesn't have a numeric keypad or the home/end/page up/page down/delete group of buttons. It's as if Apple chopped off the right side of the keyboard. You can opt for the full-size keyboard instead at no additional cost if you order your iMac through Apple.com.

Performance

Every new iMac generation is faster than the previous one, but there are significant speed gains with this new lot. Let's start with the fastest iMac, the 3.06GHz 24-inch iMac: it posted an overall Speedmark score that was 24 points (8 percent) higher than that of the previous build-to-order 24-inch iMac with the same 3.06GHz Core 2 Duo processor. The new entry-level iMac, a 2.66GHz 20-inch model, had a Speedmark score that was 26 points (11 percent) higher than that of the previous entry-level model, a 2.4GHz 20-inch iMac.

The new 2.66GHz 24-inch iMac doesn't just offer a bigger screen, more RAM (4GB versus 2GB), and a larger hard drive (640GB versus 320GB) than the entry-level 20-inch iMac, which has the same processor speed. It gives you a performance boost, too—the 2.66GHz 24-inch iMac posted a Speedmark score that was 14 points (5 percent) higher than that of the 2.66GHz 20-inch model. However, this model is $300 more than the 20-inch one.

There's a $400 difference between the high-end 3.06GHz iMac and the 2.93GHz iMac. Looking at the Speedmark score, there's only an 11-point difference (4 percent) between them. But the key difference is the graphics card; the 3.06GHz iMac has a 512MB Nvidia GeForce GT 130, while the 2.93GHz iMac has a 256MB Nvidia GeForce GT 120. The 3.06GHz iMac posted 7 more frames per second than the 2.93GHz iMac in our Call of Duty 4 frame-rate test.

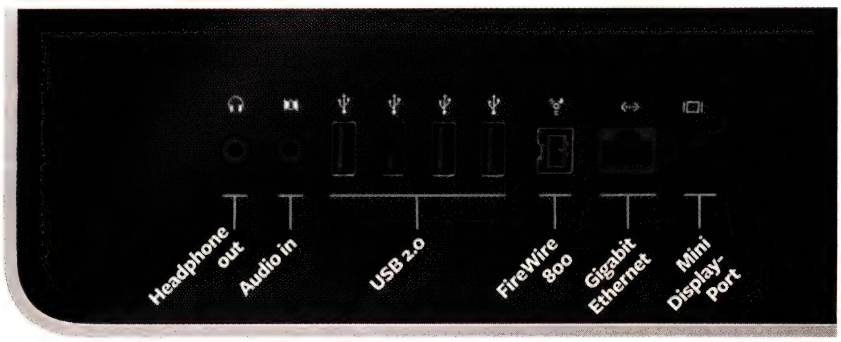
Macworld's Buying Advice

The iMac continues to be a desktop Mac that's powerful enough to please both general consumers and professionals. If you have a sizable investment in FireWire 400 peripherals, that may discourage you from upgrading, but keep in mind that we've probably seen the last of FireWire 400—you'll have to buy adapter cables sooner or later. And if you're waiting for a matte-screen option, don't hold your breath. Glossy is here to stay.

While the 20-inch iMac is an attractive model for the price, spend $300 more for the 24-inch 2.66GHz iMac—you'll get more RAM, twice the storage capacity, and better performance than the 20-inch iMac can give you. The 3.06GHz iMac is the iMac to get if you want the best graphics performance.

Roman Loyola is a *Macworld* senior editor.

iMAC PORTS



20-INCH iMAC/ 2.66GHZ

3½

PROS Compact, all-in-one design; good speed boost over previous analogous models.

CONS Glossy screen may frustrate some users; no FireWire 400 port; narrow viewing angle; some color shifting.

PRICE: $1,199

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4500

24-INCH iMAC/ 2.66GHZ

4

PROS Compact, all-in-one design; big, beautiful screen; better value for the money than the low-end model.

CONS Glossy screen may frustrate some users; no FireWire 400 port.

PRICE: $1,499

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4500

24-INCH iMAC/ 2.93GHZ

4

PROS Compact, all-in-one design; big, beautiful screen.

CONS Glossy screen may frustrate some users; no FireWire 400 port.

PRICE: $1,799

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4500

24-INCH iMAC/ 3.06GHZ

4

PROS Compact, all-in-one design; big, beautiful screen; good video frame-rate performance.

CONS Glossy screen may frustrate some users; no FireWire 400 port.

PRICE: $2,199

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4500

MAC MINI

Apple's affordable desktop Mac gets a graphics boost

BY DAN FRAKES

It took Apple such a long time—11 months—to release the previous update to the Mac mini line that many people wondered if the company would discontinue the mini. So you can imagine the speculation that has occurred in the 19 months since *that* update. But in early March, Apple finally gave the company's least-expensive computer another refresh, bringing the Mac mini line its most significant upgrades to date.

Not-So-Mini Improvements

On the outside, the newest Mac mini models look almost identical to their predecessors: they are housed in the familiar aluminum-and-white, 6.5-by-6.5-by-2-inch enclosure. The tiny box the mini comes in hints at the lack of included peripherals; all Apple supplies is a power adapter and cable, a mini-DVI–to–DVI video adapter, DVDs containing Mac OS X and iLife '09, and documentation. You provide the keyboard, mouse, and display. Missing this time around is Apple's Remote, now a $19 option.

But a quick glance at the back of the new Mac minis makes it clear these are updated machines. The new model sports five USB ports and replaces the previous model's FireWire 400 port with a faster FireWire 800 connection. It also has *two* video ports: a mini-DVI port and a Mini DisplayPort connector. The former connects to standard DVI displays, using the included adapter; the latter works directly with Mini DisplayPort–equipped displays such as Apple's 24-inch LED Cinema Display (★★★★; macworld.com/4260). You can even use two displays simultaneously, in either mirrored or extended-desktop mode.

Remaining the same as in the last minis are the Gigabit Ethernet port, the digital/analog audio-input and -output jacks, and the security lock slot.

Under-the-hood improvements include a new graphics processor, the same Nvidia GeForce 9400M found in the current MacBook line. In addition to having more-powerful processing capabilities, the 9400M takes advantage of up to 128MB of the main memory on a mini with 1GB of RAM, or 256MB on a mini with 2GB. The mini's Intel Core 2 Duo processor is now a 2GHz Penryn chip with a 3MB Level 2 cache and a faster system bus (1,066MHz); a 2.26GHz mini is available as a build-to-order option. Memory is now 1,066MHz DDR SDRAM, with the $599 mini getting 1GB and the $799 mini getting 2GB. Both models can handle up to 4GB of RAM; the 1GB model ships with a single 1GB DIMM, leaving the other DIMM slot free for expansion.

Both mini models sport SATA hard drives—now 120GB in the $599 model and 320GB in the $799 model. However, these drives are still 2.5-inch, 5,400-rpm laptop models. They may keep the mini's energy use low—at less than 13 watts when idle, according to Apple—but they perform relatively poorly. Now standard in both models is a dual-layer SuperDrive, 802.11n wireless connectivity, and Bluetooth 2.1+EDR.

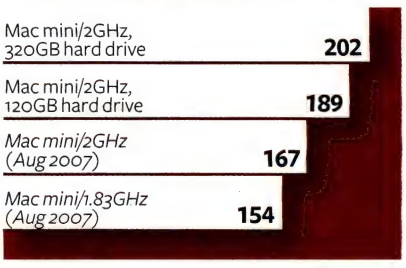
Performance

The Mac mini has never been about performance, and the latest models don't change that. While our benchmarks show a notable jump in Speedmark scores compared with the August 2007 Mac mini models, individual tasks that aren't graphics-intensive show more-modest gains. Larger gains are found in tests of hard-drive performance: in our Finder Unzip Archive test, the new models are 17 and 35 percent faster than the previous top-of-the-line mini. This is still slow relative to other desktop Macs; in fact, when booted from an external FireWire 800 drive, the $599 Mac mini outperformed both itself and the $799 model when booted from the mini's stock drive.

It's in the graphics arena that the new Mac minis really outshine their older

MACWORLD LAB TEST

Speedmark 5 Test Results



Longer is better. Reference systems are in *italics*. Speedmark 5 scores are relative to those of a 1.5GHz Core Solo Mac mini, which is assigned a score of 100. All systems were running Mac OS X 10.5.6, with 2GB of RAM.—MACWORLD LAB TESTING BY JAMES GALBRAITH, CHRIS HOLT, AND HELEN WILLIAMSON

counterparts. The new $799 mini's performance—measured in frames per second—was seven times that of its predecessor in our Quake 4 test and nearly three times that of its predecessor in our Unreal Tournament 2004 test. Even more telling, the new mini ran at 35.6 fps in Call of Duty 4; the previous generation of minis couldn't even run the game. (The $599 model didn't fare quite as well, due mostly to inadequate RAM, but it still outperformed its predecessor.) Real-world testing showed similar results: Call of Duty is quite playable on the $799 Mini. That model also runs Apple's iLife suite well; for example, I imported a number of 720p video clips into iMovie '09 and was able to use all of the program's features with reasonable performance.

Unfortunately, the $599 model's paltry 1GB of RAM can hamper its performance considerably, even if you use your computer mainly for basic stuff—Web browsing, e-mail, and running an office suite such as Apple's iWork or Microsoft Office. And its performance in Call of Duty is noticeably worse than the $799 model's. Upgrading the $599 model to 2GB of RAM removes nearly all these differences.

Macworld's Buying Advice

The new Mac mini models are significant upgrades—for the first time, the Mac mini is truly capable of handling the iLife suite. More than ever, it's an appealing computer for people who already have a display, keyboard, and mouse, or those looking to build a Mac system on the smallest budget (or in the smallest space). It's also a good upgrade for owners of the PowerPC and first-generation Intel Mac minis.

However, the new models may not entice people who purchased a Mac mini in 2007, unless they perform graphics-card–intensive tasks such as gaming.

It's in the graphics arena that the new Mac minis really outshine their older counterparts.

Although the $599 model's 1GB of RAM is disappointing, the system itself is a better buy than the $799 mini. People who are willing and able to perform their own RAM upgrades should do so. (Apple's policy has always been that as long as you don't break anything in the process, you're free to upgrade your Mac mini yourself without voiding your warranty. The company confirmed to *Macworld* that this is still the case.) People who aren't skilled with putty knives and spudgers should instead consider purchasing the $599 model with Apple's $50 2GB RAM upgrade and then attaching an external drive; you'll get more storage for your money, and if you go the FireWire route, you can actually get better performance than you would with the $799 mini.

Dan Frakes is a *Macworld* senior editor.

120GB MAC MINI/2GHZ

PROS Tiny size; performance comparable to that of the $799 model; much improved graphics performance compared to that of older models; two video outputs with support for extended-desktop mode and 30-inch displays; five USB ports; FireWire 800.

CONS Even slower hard drive than $799 model; too little RAM; difficult to upgrade.

PRICE: $599

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4499

320GB MAC MINI/2GHZ

PROS Tiny size; significantly improved graphics performance compared to that of older models; two video outputs with support for extended-desktop mode and 30-inch displays; five USB ports; FireWire 800.

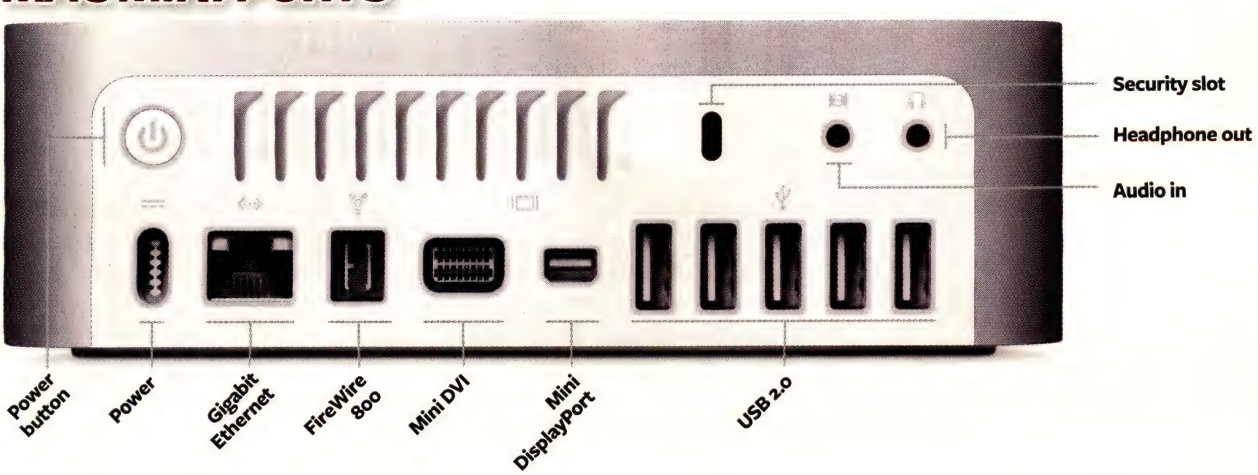
CONS Slow hard drive; difficult to upgrade; $200 premium over $599 model doesn't get you many improvements.

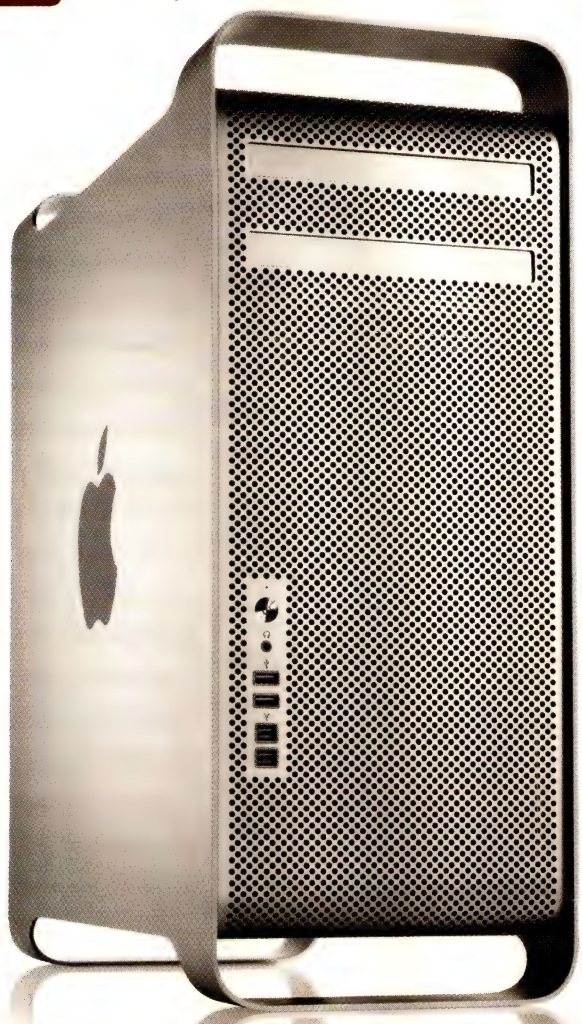
PRICE: $799

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4499

MAC MINI PORTS





MAC PRO

Mac tower pumps up performance despite speed drop

BY JAMES GALBRAITH

Though you wouldn't know by looking at it, Apple's new tower, the Mac Pro, has just received a major overhaul. The two tower models each pack a brand-new processor and video system, and feature a reorganized internal design. However, they both have lower clock speeds than their predecessors.

Last year's standard Mac Pro featured a 2.8GHz eight-core Intel Xeon processor based on the Harpertown/Penryn architecture. This year there are two models: a quad-core system with a 2.66GHz Nehalem Xeon processor, and an eight-core model running two quad-core Xeon processors at 2.26GHz. Also new to the Mac Pros are Nvidia GeForce GT 120 graphics cards and a revamped interior designed to ease user access for upgrading internal components.

Similar but Different

Aside from the second optical-drive slot on the front, the Mac Pro continues to use the same big-handled, aluminum case as the Power Mac G5, introduced nearly five years ago. There are some minor changes to the exterior, though, specifically in the type and number of connections. First, the two FireWire 400 connectors from previous generations have been replaced with backward-compatible FireWire 800 ports, bringing the number of FireWire ports to four—two on the front and two on the back. The five USB 2.0 ports, two on the front and three on the back, remain. On the graphics card, one of the two dual-link DVI connectors at the rear of the system has been replaced with a Mini DisplayPort connector, which lets you connect either to Apple's 24-inch LED Cinema Display or, with adapters (not included), to a second DVI display.

Upon opening the case, you immediately notice major changes in the layout of the components. The memory modules are no longer installed on two trays—instead, the memory and processor all rest on a sled at the bottom of the case, which you slide out by releasing two latches. The quad-core Mac Pro has four memory slots that ship with 3GB, 6GB, or 8GB of 1,066MHz DDR3 SDRAM modules; the eight-core Mac Pro has 8 DIMM slots, for a maximum of 32GB of RAM. This memory design means the large heat sinks are no longer necessary.

The Mac Pro still has four internal, cable-free hard-drive slots, using a sliding tray to attach the drives directly to the motherboard. Now, though, the large plastic piece holding the fan near the front of the Mac Pro is much smaller, giving your fingers more room to grip the hard-drive sleds. This is a small but welcome change. Another nice design change helps ease the removal of PCI cards from the four full-size PCI Express 2.0 card slots. To remove a card in the past, you first had to turn two large thumbscrews that held a small plate keeping the cards in place. Then you had to feel around behind the card, searching for a small plastic tab mounted on the motherboard, which you needed to lift up in order to release the card. The new Mac Pro makes that second step much easier. You now simply push a single thin bar that extends across all the PCI Express 2.0 slots to release any or all cards. Apple has also made installation of its add-on Apple RAID card much easier: you just

slip it into the clearly marked top slot, and you're good to go.

Installed in the first PCI Express 2.0 slot is the new Nvidia GeForce GT 120 graphics card with 512MB of video RAM; the last generation of Mac Pros came standard with an ATI Radeon HD 2600 XT graphics card with 256MB of memory.

New Processor

The new Mac Pro uses Intel's Xeon 3500 or 5500 quad-core processors, part of the new Nehalem family of microprocessors. Several major architectural innovations boost these chips' performance. The new processors feature all four cores on a single die, making its 8MB of L3 cache available to any and all processing cores. The memory controller is now on-chip, giving the processor faster access to the main memory, and reducing memory latency by up to 40 percent. Previously, the Mac Pro had 12MB of L2 cache per processor, with 6MB shared between pairs of processing cores. Each processor now has full access to 8MB of L3, as well as to a small amount of dedicated L2 cache, whereas the previous Mac Pro had no L3 cache.

MAC PRO/QUAD-CORE 2.66GHZ

4½

PROS More-powerful Nehalem microprocessor; easier to upgrade internal components; lower price.

CONS None significant.

PRICE: $2,499

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4501

MAC PRO/EIGHT-CORE 2.26GHZ

4

PROS More-powerful Nehalem microprocessor; easier to upgrade internal components.

CONS Most routine apps perform better with fewer, but faster, processors.

PRICE: $3,299

COMPANY: Apple, www.apple.com

FULL REVIEW: macworld.com/4501

A technology called Hyper-Threading creates two virtual cores per each physical core, allowing each physical core to run two processes at once; this design helps the system use the available processing power more efficiently. Also new to the Nehalem processors is a technology Intel calls Turbo Boost. Turbo Boost helps speed up the majority of applications that haven't been written to take full advantage of multicore processors; it does this by allowing the system to spin down idle processing cores while increasing the speed of the processors in use. This lets a 2.93GHz Xeon, for example, run at speeds as high as 3.33GHz, Apple says.

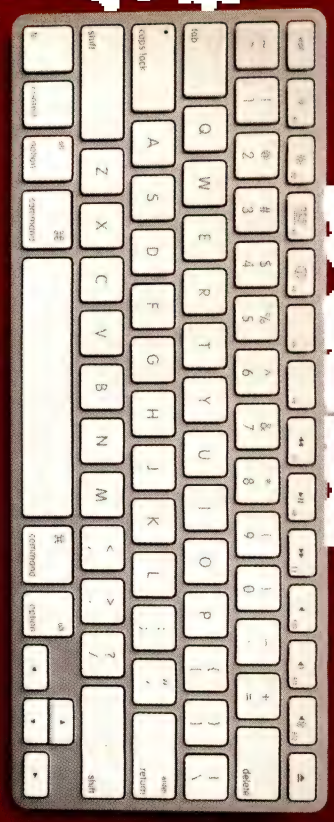
Performance

So do all of these innovations translate into better performance? The 2.66GHz quad-core Mac Pro posted faster speeds in Photoshop, Compressor, iMovie, iTunes, and 3-D game benchmarks than the previous standard eight-core Mac Pro. That's pretty impressive considering that the new Mac Pro is using only half the number of processing cores of last year's standard configuration—and at a slower speed. The new quad-core's score in our overall system performance suite, Speedmark 5, was 16 percent faster than that of the previous 2.8GHz eight-core Mac Pro. It was also 27 percent faster in our Photoshop tests, and 20 percent faster at Compressor than the older system.

The new 2.26GHz eight-core Mac Pro has twice as many processing cores as the 2.66GHz quad-core model, but each core runs 15 percent slower than the cores in that 2.66GHz quad-core Mac Pro. Because many applications have a difficult time using even four processors efficiently, the advantage of having eight was not apparent in most of the application tests that make up our Speedmark benchmark test suite. In fact, the new eight-core system posted a lower Speedmark score than the quad-core system, and bested it in just one test—Cinema 4D, where it posted a 28 percent faster time.

Pro App Testing

We run Speedmark on all Mac systems, so the suite is light on the few industrial-



NO MORE KEYPAD

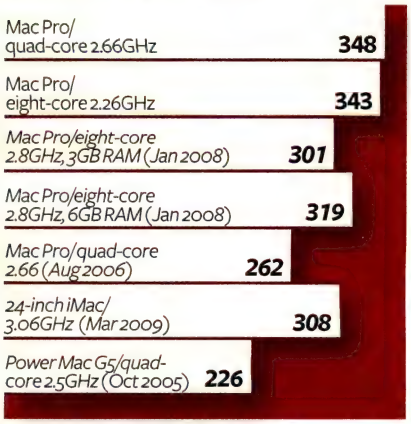
When Apple introduced its aluminum keyboard line back in August 2007—the full-size wired keyboard (4½; macworld.com/3970) and the wireless keyboard sans numeric keypad (4; macworld.com/3970)—many Mac users expressed their desire for a wireless version of the full-size model, complete with numeric keypad. Along with the introduction of the latest iMac and Mac mini models, Apple finally added another keyboard—one that's exactly the opposite of those requests. The new Apple keyboard is essentially the old wireless keyboard without the wireless functionality (or, depending on your perspective, the wired keyboard with the numeric keypad chopped off; in fact, the previous Apple keyboard has been renamed Apple Keyboard with Numeric Keypad). In addition to the missing numeric keypad, the new model lacks the home/end/page up/page down/delete group of buttons. Otherwise, it provides the same full-size keys, special functions, and sturdy, compact design as the wireless keyboard, as well as the identical (and controversial) Chiclet-style keys. The new keyboard is likely to appeal to people who want a compact keyboard but don't need wireless functionality. Apple is also shipping the keyboard with all new iMacs, although, if you buy from Apple, you can opt for the larger, keypad-equipped model at no charge.—DAN FRAKES

strength professional apps that take full advantage of multicore processors. Also, Speedmark tests are run one at a time, which makes it less likely the system will need to draw on the increased RAM. For those reasons, we decided to add a couple of tests to the suite to better test the Mac Pro, namely Mathematica and a ProRes Compressor test.

In these tests, the applications recognized and used all 16 virtual cores of the new eight-core Mac Pro. In Mathematica-Mark 7, the new quad-core Mac Pro received a score of 10.1, nearly identical to the 9.7 score of last year's eight-core 2.8GHz Mac Pro. The new 2.26GHz Mac Pro scored 16.8, or 73 percent higher than last year's eight-core Mac Pro. In our ProRes encode test to Compressor's H.264 iPod/iPhone 640 by 480 preset, the new 2.66GHz Mac Pro took 9 minutes and 38 seconds to convert our 6 minute and 41 second clip, about 6.6 percent longer than the older eight-core 2.8GHz system did. The new 2.26GHz Mac Pro was about 8.9 percent faster than last year's model. The new Mac Pro's graphics performance showed much improvement when running 3-D games at high resolution. With the Nvidia GeForce GT 120 graphics, the new Mac Pros were able to push through about 44 percent more frames per second than last year's standard 2.8GHz eight-core Mac Pro when running Call of Duty 4 at 1,920 by 1,200 pixels, and nearly twice as many frames per second when running Quake 4 at high resolution. Notably, the new 3.06GHz 24-inch iMac, with its Nvidia GeForce GT 130 graphics chip, beat both Mac Pros in most of our graphics tests.

MACWORLD LAB TEST

Speedmark 5 Test Results



Longer is better. Reference systems are *in italics*. All systems were running Mac OS X 10.5.6. The quad-core systems were tested with 3GB of RAM, the iMac was tested with 4GB of RAM, the eight-core 2.8GHz was tested with 3GB and 6GB of RAM, and the new eight-core system was tested with 6GB of RAM.—MACWORLD LAB TESTING BY JAMES GALBRAITH, CHRIS HOLT, AND HELEN WILLIAMSON

Macworld's Buying Advice

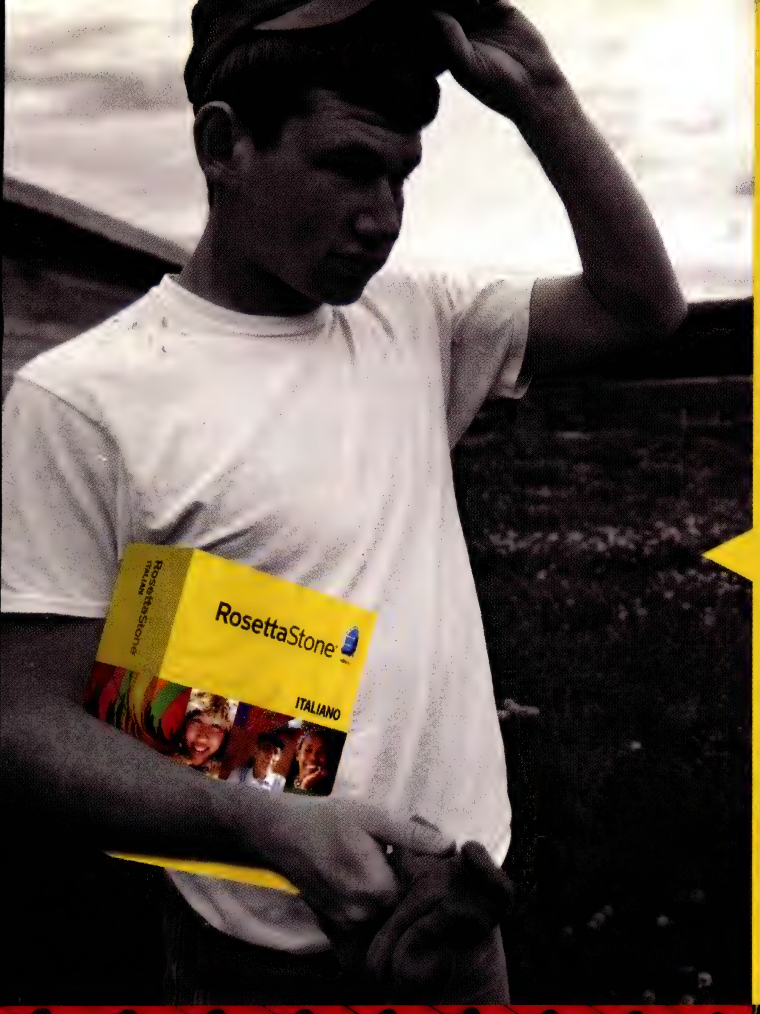
The new Mac Pros, with their cutting-edge Nehalem processor technology, are able to execute more tasks at a faster clip, despite lower processor speeds. And their new internal design makes adding hard drives, memory cards, and PCI Express 2.0 cards easier than ever. Apple's most expandable Mac is the pro platform for power users.

With its improved graphics, memory bandwidth, and reduced memory latency, the 2.66GHz quad-core Mac Pro was faster than the 2.8GHz eight-core Mac Pro, and, at $2,499, costs $300 less. It would be a fine purchase for anyone replacing an older Mac or buying a new one for the first time. That is especially true for people who work with processor-intensive apps such as video or graphics.

It's harder to recommend that people spend $800 more for the new $3,299 2.26GHz eight-core Mac Pro if they don't run software written for the top-of-the-line Mac Pro's eight processor cores. Though the 2.26GHz model was faster at most individual tasks than the previous eight-core 2.8GHz Mac Pro, and very fast in a few of our professional application tests, it was slower than the new quad-core model at the majority of our application tests.

James Galbraith is *Macworld*'s lab director.

PHOTOGRAPH COURTESY OF APPLE



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Photography by Peter Belanger
Illustrations by Tyson Smith

Macs come with hard drives that have a vast amount of free space on them, but once you add applications, buy (or make) digital music and videos, and move photos from your camera to your computer, your Mac may tell you that "your startup disk is almost full." But you don't need to rely solely on your Mac's built-in drive to store your files. To give yourself more storage space for your data, invest in an external storage device. In addition to giving you more space, an external storage device can help you better organize your files. And if you want to perform data backups with Mac OS X's Time Machine, an external storage device is a must-have.

You have myriad storage choices—external hard drives, desktop RAIDs, optical disc burners, solid-state drives, flash drives, and network-attached storage. Depending on your situation and your file types, some storage devices will serve you better than others.

In this buyer's guide we provide insight into storage media and technologies, and help you determine which solution is best for you—so you can unleash your inner pack rat.

External Desktop Hard Drives: Mass Storage and Speed

A hard drive contains spinning platters with magnetic surfaces, and mechanical arms with heads that read and write data on those platters. The hard drive in your Mac is often referred to as an *internal* hard drive. An *external* hard drive is a hard drive, packaged in a case, that connects to your Mac via USB 2.0, FireWire 400, FireWire 800, or eSATA.

External desktop hard drives are great because they offer the best combination of features. They're relatively affordable, and their prices drop regularly; you can buy a 1TB USB-only external hard drive for less than $200. External hard drives have faster data-transfer speeds than DVDs or CDs; they're easy to use (with most external hard drives, all you have to do is plug the device into the proper port); you can disconnect them from one computer and attach them to another; and they come in a variety of sizes and forms.

However, there's always the possibility—albeit small—that a drive's read-write head will come into contact with a platter, causing a failure. And hard drives have varying life spans—some last a few months, while others can last longer than a decade. But most drives come with limited warranties that last between one and five years. (There's a good chance that by the time the warranty expires, you'll be ready to upgrade.)

Overall, if you're looking for a quick and painless way to give yourself massive amounts of storage for your music, photos, videos, or system backups, an external hard drive is hard to beat.

Shopping Tips

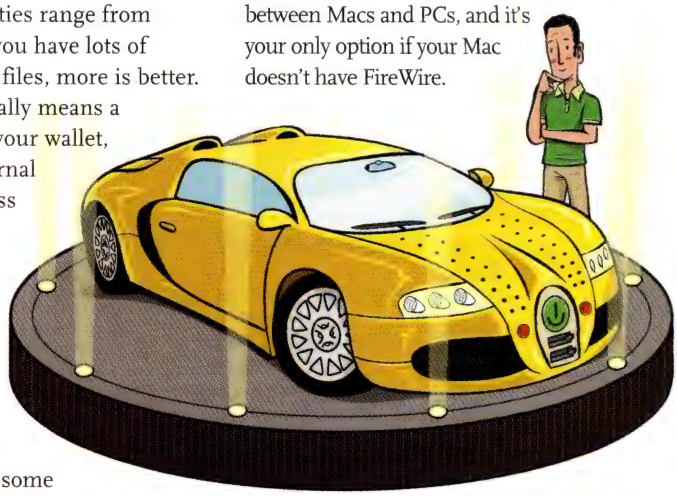
You can find external hard drives labeled as Mac-compatible, or you can use Disk Utility (/Applications/Utilities), which comes with OS X, to reformat Windows-formatted drives. Here are some shopping tips to keep in mind.

Capacity Capacities range from 160GB to 2TB. If you have lots of media or graphics files, more is better. More capacity usually means a bigger bite out of your wallet, but some 1TB external hard drives cost less than $200.

Connectivity You'll use USB 2.0, FireWire 400, or FireWire 800 to connect to your Mac. Many drives feature multiple ports, but some offer only one (usually either USB or FireWire 400).

Although USB 2.0 (480 Mbps) has a faster transfer speed than FireWire 400 (400 Mbps), hard drives rely on sustained throughput; and in this respect, FireWire comes out faster—especially with large files. With FireWire, you can boot up your FireWire-equipped Mac from the drive, as well as daisy-chain the drive to other FireWire devices. FireWire 800 (786 Mbps) is faster than USB 2.0 and FireWire 400, but it may not be available on some Macs.

USB is a must if you're sharing the drive between Macs and PCs, and it's your only option if your Mac doesn't have FireWire.



External Desktop Hard Drive Suggestions

OWC Mercury Elite-AL Pro Quad Interface 1TB With USB 2.0, FireWire 400, FireWire 800, and eSATA connectivity ports, as well as bundled software, this drive mimics the look of a Mac Pro (●●●●; $210; macworld.com/3294).

Seagate FreeAgent Desk for Mac 1TB This aluminum-encased 7,200-rpm drive (pictured right) sports USB 2.0 and FireWire 800, and it comes with a FireWire 800–to–FireWire 400 adapter cable (●●●●; $190; macworld.com/4167).

Western Digital My Book Studio Edition 1TB This silver 7,200-rpm drive packs port versatility, automated backup software, an antitheft port, and more (●●●●½; $200; macworld.com/3295).

Many high-capacity drives offer eSATA (external Serial ATA), which, at 1.5 or 3 gigabits per second (Gbps)—depending on which version of Serial ATA is implemented—is faster than FireWire 800. MacBook Pro users can add eSATA by using an ExpressCard/34 expansion card; these cards range in price from $19, for OWC's eSATA SATA I/II ExpressCard/34 Adapter (eshop.macsales.com), to as much as $300, for Sonnet's Tempo SATA Pro ExpressCard/34 (www.sonnettech.com). Mac Pro users can add eSATA with an eSATA PCI, PCIe, or PCI-X expansion card; prices for these cards range from $55, for CalDigit's FASTA-2e 2 port PCI-e SATA 3G Host Adapter (www.caldigit.com), to $180, for cards like Addonics' 4 Port eSATA PCI-E 8× Controller (www.addonics.com). Mac Pro users can alternatively tap into the two unused SATA ports on the motherboard, using Newer Technology's $25 eSATA Extender Cable (●●●½; macworld.com/4383).

Speed The faster a hard drive's platters spin, the better the drive's performance. The standard rate for desktop computers is 7,200 rpm (rotations per minute), which is plenty fast for most users. Most Mac notebooks feature 5,400-rpm drives. If your tasks include recording audio, working with video, or gaming—tasks that require constant drive access—and you currently have a slower drive, a 7,200-rpm external drive will provide better performance.

Mac Pro users who do professional-level audio or video production might consider a 10,000- to 15,000-rpm drive, for optimal performance. These high-performance drives usually offer less storage capacity and require a SCSI connection, so you'll need to either install a SCSI card like Apple's $199 Dual Channel Ultra320 SCSI PCI-X Card (macworld.com/4446) or Atto's $295 ExpressPCI UL4S (www.attotech.com/ultra4s.html) to support the connection, or consider a RAID instead (as described in the next section). Check out Fantom Drives' SCSI Ultra320 300GB 10,000-rpm external hard drive ($660; macworld.com/4447); Avid's Pro Tools users may consider a Seagate Cheetah 15K.5 Ultra320 SCSI 300GB Hard Drive (street price is between $500 and $600; macworld.com/4449) installed in a SCSI enclosure.

Added Features Almost all USB and FireWire external hard drives are compatible with Mac OS X 10.5's (Leopard's) Time Machine, as long as the drive is HFS+ formatted. Some drives include extras such as bundled software, one-touch backups, and software encryption. And keep in mind that external hard drives are common targets of theft: if the drive will be publicly exposed—say, at work—find one with an antitheft port that you can use to tether the drive to your desk, and consider using encryption.

Portable Hard Drives: Take Your Data with You

Portable hard drives are smaller and easier to tote around than typical external desktop drives. Some, like Buffalo's **500GB MiniStation TurboUSB** (●●●½; $150; macworld.com/4382), feature case designs that reduce impact shock.

Some drives are *bus-powered,* which means that they draw power from a FireWire or USB connection on your laptop, with no power adapter required. That's fine for MacBooks and MacBook Pros, but some iBooks and PowerBooks do not supply enough USB bus power, so you'll have to either use a special cable that connects the hard drive to two USB ports or use the drive's power adapter.

There's always the chance that you'll lose your hard drive, so it's wise to secure your data. **Data Locker** (www.lockerdrive.com) offers portable USB 2.0 hard drives (160GB to 320GB, starting at $160) that feature hardware encryption options and a numeric touch screen where you enter a PIN to unlock the drive.

There's also third-party software, like **TrueCrypt** (payment requested; www.truecrypt.org), that encrypts content on just about any external drive. Though it's not as secure as hardware-based encryption, software encryption can stop all but the savviest hackers from accessing sensitive data.

Portable Hard Drive **Suggestions**

G-Technology G-Drive Mini 500GB This drive (pictured below) packs a 5,400-rpm ($399) or 7,200-rpm ($529) disk, includes a protective leather case, and provides bus-powered FireWire 400 and 800 ports and a non-bus-powered USB port (●●●●½; macworld.com/3949).

LaCie Rugged All-Terrain Hard Drive This durable drive's orange rubber life preserver and internal nubbins protect against shocks and slips. It has bus-powered FireWire 400 and 800 ports, as well as USB ports (●●●●; $130 [250GB]; macworld.com/2290).

Rocstor Rocbit 2B This 100GB, durable, non-bus-powered USB and FireWire 800 drive offers hardware encryption and a Secure Key port, and it's available in a 5,400- or a 7,200-rpm version (●●●●●; $230 [7,200 rpm]; macworld.com/1443).

RAID: Spacious and Speedy

For heavy-duty storage needs, a RAID (Redundant Array of Independent Disks) is the most cost-effective solution, though it can be a major hassle to set up. A RAID is two or more hard drives linked together to function as a single storage device, providing greater capacity, better performance, and automated backups (depending on how it's configured).

RAIDs come in different *levels*. In a *striped* array (RAID level 0), multiple drives work in parallel for the best possible speed and provide a combined storage capacity; however, RAID level 0 has no backup protection—you'll lose all your data if one disk fails. A *mirrored* array (RAID level 1) provides fast read times (it reads multiple drives at once) and real-time backup; it writes the same data across all disks simultaneously, so if one goes down, nothing is lost. But your total capacity is half the amount of the total capacity of all the drives. (For example, a pair of 500GB drives gives you only 500GB of total storage.) RAID level 5 uses *parity* (which provides data redundancy and better storage capabilities than RAID 1's plain mirroring), splitting data across three or more disks, so if one goes down, your files are re-created from the remaining disks.

Shopping Tips

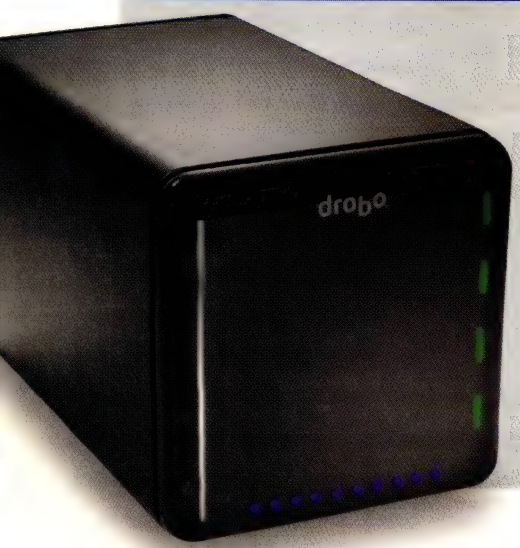
Here are a few things to consider when you're shopping for a desktop RAID. (For instructions on setting up a RAID in a Mac Pro, visit macworld.com/4384.)

Drive Enclosure Do-it-yourselfers will find enclosures with at least two empty drive bays. An enclosure that supports *hot swapping* lets you replace a drive without powering down.

You can also choose to buy a configured desktop RAID with preinstalled drives. You'll find double-drive arrays that offer up to 3TB of storage (they're generally RAID 0 or RAID 1). These RAIDs often use cases that don't allow for convenient drive swaps.

Connectivity Desktop RAIDs offer one or a combination of the usual connectivity options: USB 2.0, FireWire 400, FireWire 800, and eSATA. Since performance is usually the motivation for setting up a RAID, steer toward FireWire (FireWire 800, if your Mac supports it); consider getting an eSATA RAID and adding a port to your Mac Pro with an eSATA PCI, PCIe, or PCI-X card; or use an ExpressCard with a MacBook Pro.

Desktop RAID **Suggestions**



Data Robotics Drobo This device (pictured left) lets you mix and match as many as four 3.5-inch SATA/SATA II hard drives of any capacity and speed. Drobo automatically reconfigures and rebuilds your disks (●●●●; $499; macworld.com/3931).

G-Technology G-RAID3 This two-disk RAID 0 features an aluminum enclosure that mimics the Mac Pro's look ($499 [2TB] or $699 [3TB]; www.g-technology.com).

LaCie Big Disk Extreme+ Triple With FireWire 400, FireWire 800, and USB, this prefab RAID 0 gives video pros performance and affordable mass storage ($239 [1TB] or $420 [2TB]; www.lacie.com).

Flash Drives: Storage in a Stick

Tiny and easy to use (and lose), flash drives rely on memory chips to store data, and they can withstand the abuse that comes with being transported.

But their size also makes them tempting to thieves. Some flash drives offer hardware-based encryption or software that encrypts data (hardware encryption is more secure).

Flash drives come in capacities that range from 1GB to 64GB.

Flash Drive **Suggestions**

Lexar JumpDrive Secure II Plus This slick stick has a capacity LCD meter and Secure II software to encrypt data ($15 to $90 [1GB to 16GB]; www.lexar.com).

SanDisk Cruzer Enterprise This flash drive for Macs (pictured above) with hardware-based 256-bit encryption has customized options and multiple security tiers (starting at $75 [1GB to 8GB]; www.sandisk-enterprise.com).

Internal Hard Drive: Upgrading Options

If you have a Mac Pro, a Power Mac G5, or a Power Mac G4 or G3 with unoccupied drive bays, you can install an additional internal hard drive instead of upgrading your main one—it's easy and takes only a few minutes.

But for the iMac, the Mac mini, or old Mac laptops, replacing the internal hard drive with a drive that has more capacity can be a difficult and warranty-voiding feat. There are service providers that can do upgrades for you, such as Tech-Restore (www.techrestore.com), which provides several PowerBook and iBook hard-drive upgrade services ranging in price from $149 to $229. (The Apple Store won't do upgrade installations, but it will replace damaged parts with equivalent replacements.)

Regardless of which type of Mac you have, if you decide to replace your current internal hard drive, you'll need to copy all your current hard drive's files onto another drive before you do the switcheroo. You can use an external desktop hard drive, use a second Mac in FireWire target disk mode, or burn DVDs. To ensure that nothing slips through the cracks (like your e-mail archive, bookmarks, and fonts), consider using drive-cloning software such as Bombich Software's Carbon Copy Cloner (4½; payment requested; macworld.com/3156) or Shirt Pocket's SuperDuper (5; $28; macworld.com/2325), which easily and thoroughly duplicate your hard drive's contents.

If you upgraded your Mac's internal hard drive, what are you going to do with your old drive? You can easily (and inexpensively) convert it into an external hard drive. All you need is an enclosure to house an ATA/IDE or SATA 2.5- or 3.5-inch internal hard drive. OWC (www.macsales.com) and TigerDirect.com are good sources for enclosures, and Newegg.com has particularly good deals. Look for one with a cooling fan or a heat-dissipating design for better drive longevity. Another option is to use a dock, like NewerTech's Voyager Q ($100; www.newertech.com). It lets you insert an internal hard drive into its dock and use it as an external drive.

Shopping Tips

Here's what to look for in purchasing an internal hard drive.

Drive Compatibility Get a hard drive that matches the physical dimensions and connection interface of your Mac. MacBooks, MacBook Pros, and Mac minis use a 2.5-inch SATA drive, while PowerBooks and iBooks use a 2.5-inch ATA/IDE drive—SATA and ATA interfaces are *not* interchangeable. Likewise, recent Apple desktops (the Intel iMac, Mac Pro, iMac G5, and Power Mac G5) use a 3.5-inch SATA drive (the Mac Pro uses a SATA II drive), while older desktops (the iMac G3 and G4, and the Power Mac G3 and G4) use a 3.5-inch ATA/IDE drive. Online retailers such as OWC provide Web guides that list storage options by Mac model.

Capacity Internal 3.5-inch hard drives have capacities of up to 2TB, while 2.5-inch drives provide up to 500GB. Later G4s, all G5s, and all Intel Macs can accommodate any drive capacity, but the iMac G3, Power Mac G3 (blue and white), and early Power Mac G4 have a limit of 128GB.

Speed If you're happy with your Mac's drive performance, stick with the same disk speed, but if you have a notebook and work with audio or video, consider getting a faster, 7,200-rpm drive.

Internal Hard Drive **Suggestions**

Here are a couple of internal hard drives to look at if you want to upgrade or add a drive to a Mac Pro or a Power Mac.

Seagate Barracuda 7200.11 1.5TB For people who need mass storage, this 3.5-inch 7,200-rpm drive (pictured right) delivers a whopping 1.5TB of storage at a really nice price ($130; www.seagate.com).

Western Digital Scorpio Black For notebook owners, this 2.5-inch 7,200-rpm drive will provide a nice bump in performance and 320GB of storage ($150 [320GB]; www.wdc.com).

Optical Storage: Affordable Archives

Optical disc drives use a laser to read and write (or *burn*) data onto optical discs, of which CDs and DVDs are the most common. A standard CD holds 650MB to 800MB of data, a standard DVD holds up to 4.7GB, and a dual-layer DVD holds up to 8.5GB. Storing stuff on CDs and DVDs is the least-expensive storage solution; discs cost less than 50 cents each, and you can buy them in large quantities at once.

CDs and DVDs aren't as fast as hard drives, and their limited capacity per disc make them best for storing files you want to hang onto but don't need to access every day. You can use CDs or DVDs to store old photos and files, as well as videos and music you rarely use but want to keep around.

An external optical drive is an affordable and attractive upgrade to a Mac with a Combo drive (a CD burner that can read but not write to DVD) or a single-layer DVD burner.

Shopping Tips

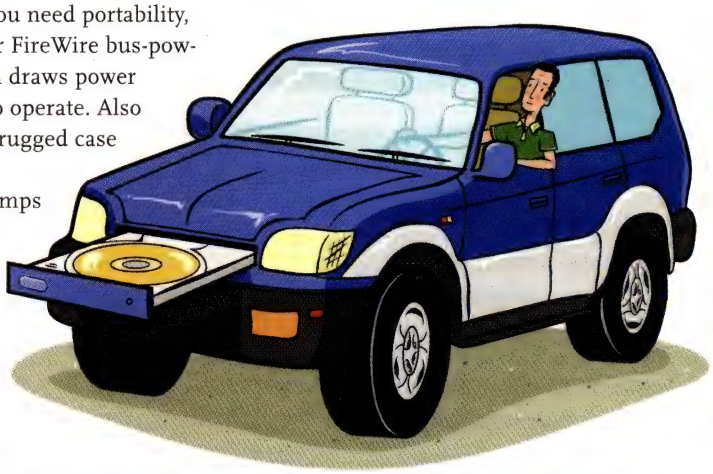
In the market for a new optical drive? Here are things to consider.

Supported Media Look for drives that offer dual-layer support. You'll notice that there are different optical-disc formats, like CD±R, DVD±R, DVD±R DL; most new optical burners are compatible with all formats.

Write Speed Don't like waiting? Look for a drive with fast write speeds. While the difference between 32× and the fastest, 52× CD-R write speed is about a minute, the speed of larger-capacity DVD±R and DVD±R DL media is more significant. It takes about 15 minutes to burn a full DVD±R with a 4× write-speed drive, about 8 minutes with an 8× writer, and under 3 minutes with the fastest 22× writer. For DVD±R DL discs, most drives offer up to 8× write speeds. Also, use discs that are compatible with a drive's speed ratings.

Portability If you need portability, look for a USB or FireWire bus-powered drive, which draws power from your Mac to operate. Also look for a small, rugged case design that can withstand the bumps that come with being stashed in a bag. (Note that portable drives often sacrifice write speed for their willowy figures.)

LightScribe Built into many optical drives, LightScribe (developed by Hewlett-Packard and licensed to other optical drive manufacturers) is a technology that laser-etches monochromatic graphics and text onto specially coated LightScribe discs. If you want professional-looking discs, look for a LightScribe burner—it can be a nice alternative to labeling discs with a Sharpie pen. However, the etching is prone to fading, and the time it takes to etch your design can far exceed the disc-write time. (If you don't commit to labeling discs somehow, though, it'll be needle-in-a-haystack time when you need to find files.)



Optical Drive **Suggestions**

LaCie d2 DVD+/–RW with LightScribe With 20× DVD, 8× dual-layer DVD, and 48× CD write speeds, this FireWire 400 writer also offers LightScribe and Roxio's Toast disc-burning software (●●●●½; $120; macworld.com/3900).

LaCie Portable DVD+/–RW with LightScribe, Design by Sam Hecht This skinny, highly portable USB drive (pictured here) offers bus power and support for dual-layer DVDs (●●●●; $99; macworld.com/3878).

LG GE20LU10 This USB drive features 20× DVD, 12× dual-layer DVD, and 48× CD write speeds and LightScribe ($100; macworld.com/4448).

What about **Blu-ray?**

It delivered a resounding TKO to HD DVD in the high-definition-format bout, but Blu-ray writers have yet to appear on any Mac computer as standard equipment or even as a customization option, and there is no sign from Apple that anything is coming soon.

Steve Jobs has long been a supporter of Blu-ray and Apple is listed as a member of the Blu-ray Disc Association Board of Directors, but at an Apple event back in October 2008, Jobs said that the issue is with Blu-ray licensing. "Blu-ray is a bag of hurt," said Jobs. "I don't mean from a consumer point of view—it's great to watch movies—but the licensing is so complex. We're waiting until things settle down and Blu-ray takes off in the marketplace before we burden our customers with the cost of the licensing and the cost of the drives."

Things may be settling down. Panasonic, Phillips, and Sony announced last February that they are working with other Blu-ray patent holders on a process that would allow manufacturers to procure one license that covers all the necessary patents for Blu-ray Disc (BD), DVD, and CD. That's a dramatic change from the current licensing process, which requires a manufacturer to obtain a license from each format's patent holders. The new licensing program would also bring down the cost of licensing fees, lessening the cost burden on Apple's customers.

Does this mean Blu-ray writers will be available in new Mac computers soon? Apple doesn't comment on future products, but if licensing is the major issue, as Jobs said last year, then these changes in the Blu-ray licensing process are steps toward making that "bag of hurt" a lot less painful.

Fortunately, you don't have to wait for Apple in order to get a Blu-ray writer for your Mac. There are other sources. And Blu-ray discs aren't just for playing Hollywood movies—they can store a vast amount of data (25GB on a single-layer BD and 50GB on a dual-layer disc), and they can showcase your own HD video creations, too.

If a burner is what you seek, you'll find internal and external Blu-ray recordable drives that support Blu-ray, DVD, and CD burning; however, they're pricey and discs are relatively expensive. For Mac Pros (you can fit an internal drive into the second 5.25-inch bay of the Mac Pro tower, if it's not already occupied) and Power Macs, the internal MCE **6× Blu-ray Recordable Drive** ($499; www.mcetech.com) offers 6× Blu-ray writing. FastMac's **Blu-ray 4×** ($580; www.fastmac.com) has a SATA port if you prefer a faster connection. External drives include LaCie's **d2 Blu-ray Drive** ($450; www.lacie.com) and OWC's **Mercury Pro Blu-Ray** ($450; www.macsales.com). For people who need portability, the Amex **Portable Super Multi Drive** ($469) offers 2× BD-R (single and dual-layer), bus-powered USB 2.0 connectivity, and DVD/DVD-RAM/CD burning in a slim case.

While burning files to a Blu-ray disc requires nothing more than Mac OS, you need third-party software to create a video Blu-ray disc. Roxio's **Toast 10 Titanium** with the High-Def/Blu-ray Disc Plug-in ($100 plus $20 for the plug-in; www.roxio.com) lets you author HD video content onto Blu-ray—or even onto standard DVD-Rs (no Blu-ray burner required)—for playback on Blu-ray or HD DVD set-top players. Adobe Premiere Pro CS4 (♦♦♦♦; $799; macworld.com/4182) might not have Final Cut Pro's clout, but it does come with **Encore CS4** software for Blu-ray video production—something Apple's DVD Studio Pro 4 doesn't support. (Note that there currently is no Mac software that plays video from a Blu-ray disc, another hurdle that needs to be overcome before Blu-ray writers become standard equipment on new Macs.)

HD Video Alternatives

There are other ways to showcase your HD videos on an HDTV. You can use the aforementioned Toast to author an HD movie onto a standard DVD+/-R for playback on any Blu-ray or HD DVD set-top player. Or you can use one of the following HD playback devices.

You can stream HD video from a Mac (through iTunes) over the Apple TV's wireless 802.11n connection for video playback on a connected HDTV. Or sync the **Apple TV** (♦♦♦♦; $229 [40GB], $329 [160GB]; macworld.com/3454) with your Mac over iTunes, and copy your video to the Apple TV for HDTV playback at home. The iTunes Store also sells HD movies, so you can buy your favorite films and use the Apple TV to watch them on your HDTV.

Got a USB hard drive? House your HD movie on it, connect Western Digital's **WD TV HD Media Player** (pictured below; $130; www.wdc.com) between the drive and an HDTV, and use the included remote to navigate to and play back video (or other media files) at up to 1,080p resolution. Although designed to work with Western Digital's My Passport hard-drive line, the company says that the WD TV should work with other USB storage devices. The WD TV also features audio and photo playback. You can't play protected audio or video from the iTunes Store, however.

Network Storage: Shared Storage Space

Network storage allows multiple computers to access a dedicated file-sharing and -storage volume. It lets you offload or back up files from multiple computers, centralize your iTunes and iPhoto collection for sharing, and access communal files from multiple computers. If you have a wireless network, you can easily expand access to additional wireless-equipped computers. Introducing networked storage can be as simple as attaching an external desktop hard drive to your AirPort Extreme.

determining which of the following situations you fit into.

If you have a wireless network anchored by an Apple AirPort Extreme (●●●●½; $179; macworld.com/3109), you can connect just about any USB 2.0 external desktop hard drive to the base station for storage and file sharing. All Macs and PCs on your AirPort network will see the connected drive as an AirPort Disk, for which you can use AirPort software to set up account access, password protection, and read/write file permissions. If your network includes Macs and PCs, you'll need to

Introducing networked storage can be as simple as attaching an external desktop hard drive to your AirPort Extreme.

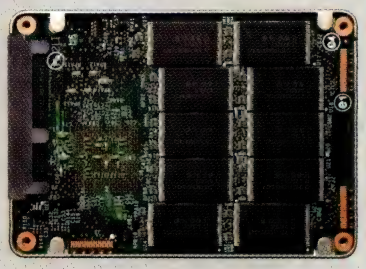
Of course, with so many cooks in your storage kitchen, there is an increased chance that someone could accidentally delete or overwrite files, or that a virus-infected PC could spread its ills to your shared storage volume and, ultimately, other computers. And playing network cop by setting up file access and troubleshooting can be time-consuming and difficult. But for small office/home office use, several easy-to-configure storage options exist; find yours by

format your drive as FAT32 so the PCs can use the drive.

If you don't have a wireless network but want one, consider Apple's Time Capsule (●●●●; $299; macworld.com/3992), which combines the speedy 802.11n Wi-Fi base station capabilities of an AirPort Extreme with the mass storage capabilities of an external hard drive. Additionally, the Time Capsule is Time Machine–compatible, so all OS X 10.5 users on your network can take advantage of automated backups without having to connect a drive.

Another alternative is to combine a Time Capsule, an AirPort Extreme AirPort Disk, and Apple's MobileMe so you can remotely access the hard drive's files over the Internet as easily as you would access files on a regular hard drive.

Solid-State Drives: The Future of Storage



Hard drives are a storage fixture in the computing industry, but their moving parts, heat production, and potential for failure aren't ideal for on-the-go types. Enter the solid-state drive (SSD)—a sturdier alternative that has been around since the 1970s but just started appearing in laptops in 2007, and is now available in Mac laptops.

An SSD uses solid-state memory. The exterior of the mechanism mimics the look of an internal hard drive, as it's designed to be a drop-in replacement. Because they have no moving parts, SSDs are more reliable, draw less power, and can access data faster than hard drives, although their write speeds are generally slower.

As with any new product, prices for solid-state drives are steep compared with hard drives; Apple charges an extra $500 to $600 for a 128GB SSD upgrade in a MacBook, MacBook Pro, or MacBook Air.

Current prices for a 2.5-inch SSD fluctuate wildly and are often based on drive performance. They range from $100, for a 32GB Transcend **TS32GSSD25-M SSD** (www.transcendusa.com), to $800, for a 250GB (the current highest capacity) OCZ Technology **Core Series V2 SSD** (www.ocztechnology.com) or a 160GB Intel **X25-M SSD** (www.intel.com), and up to $2,000, for a blazingly fast, enterprise-level 128GB **MemoRight GT SSD** (www.memoright.com). But prices are dropping; at press time, we found quite a few 128GB SSDs for under $500 online.

Network-Attached Storage: No-Nonsense File Server

A network-attached storage (NAS) drive is a dedicated storage device that uses its own operating system and software to provide centralized storage and file sharing over a computer network. Think of it like a file server, except it doesn't need a dedicated computer that's attached to the network. A NAS drive has an Ethernet connection, and you plug it directly into your network router.

NAS prices have come down to almost standard external hard-drive levels, so if you've thought about sharing one hard drive among multiple Macs or buying an external drive for each, a NAS drive may be more convenient and cost-effective.

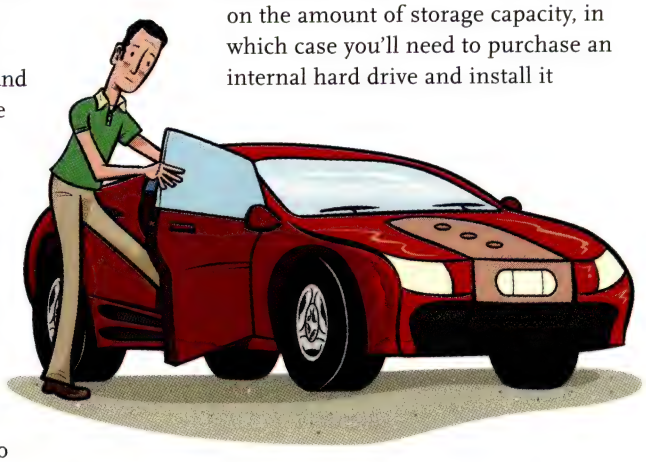
An alternative to adding a NAS drive is to use Addonics's NAS Adapter ($55; www.addonics.com) with a USB external hard drive. The adapter has a USB port on one end for your hard drive, and an Ethernet port on the other end for connecting a cable between the adapter and the router.

Shopping Tips

When shopping around for NAS, consider the following factors.

Mac Compatibility Not all NAS drives play nice with Macs. In the NAS world, SMB (Server Message Block), a Windows file-sharing protocol, dominates. Macs can use it, but due to some file-naming restrictions, you may have to rename some files. Macs use AFP (Apple Filing Protocol) for file sharing, so look for NAS drives that support it—some support Bonjour (OS X's built-in networking protocol for local network devices), too. To make configuration easier, most NAS drives come with software or a Web browser–based wizard that will walk you through the process, but some setups can be tricky—especially if the device doesn't support AFP.

Drive Facility NAS devices have either a preinstalled hard drive or an empty enclosure that lets you decide on the amount of storage capacity, in which case you'll need to purchase an internal hard drive and install it yourself (going this route could save you some money, however).



Extra Features Many NAS drives offer additional benefits. If you want to offload your music, movies, and photos onto a centralized server and stream content to multiple computers, look for NAS drives with media server functionality (many support iTunes streaming). If you want to back up files, look for a drive that provides backup capability through software, a USB port to connect an external hard drive, or RAID support (only a few support Time Machine, which requires a Mac-only HFS+ formatted drive). If you want to access the drive remotely, look for a model that offers access over the Internet or FTP. ⊠

Writer, music composer, photographer, and pack rat **Kris Fong** has archived tens of thousands of files. Now if she could only remember what's stored where...

NAS Suggestions

LaCie Ethernet Disk Mini This affordable NAS drive (pictured left) offers AFP, mass storage, media server functionality, remote access, backup software, and storage expansion through USB. It's also easy to set up and features LaCie's d2 case designed by Neil Poulton ($170 [500GB], $210 [1TB]; www.lacie.com).

Netgear ReadyNAS Duo It may be pricey, but this NAS drive features an extra drive bay so that you can install another hard disk for mirroring data. The drive also offers AFP, remote access, media server functionality, and a BitTorrent client ($400 [500GB], $680 [1TB]; www.netgear.com).

NewerTech MiniStack NAS Sporting a Mac mini–like look, this portable 7,200-rpm NAS drive is easy to set up, and it offers AFP, ProSoft backup software, Time Machine compatibility, a security slot, and media server functionality ($138 [160GB], $280 [750GB]; www.newertech.com).

Search Smarter

Tips for faster, easier, and more-effective Web searches **BY JOE KISSELL**

Whether you're researching a business proposal or looking for the latest information about digital cameras, you probably search the Web many times a day, often using the search field built into your browser. Run-of-the-mill Google searches usually turn up useful results, but you can save time and get more-relevant matches with this collection of tips.

Get More from Google

If you turn to Google.com for the bulk of your Web searches, learning some of its lesser-known tricks is worthwhile. Simply by adjusting your preferences and using some special expressions, you can home in on the right results more quickly.

Set Your Preferences In your Web browser, go to www.google.com and click on the Preferences link to the right of the search field. In the Number Of Results section, use the pop-up menu to change the default Display 10 Results Per Page option to a nice large number (such as 100). Having more results on each page means less clicking. Likewise, save yourself some typing by selecting the Provide Query Suggestions In The Search Box option in the Query Suggestions section. Google will guess the rest of a search term as you enter it.

Once you've customized your settings, click on Save Preferences. Note that you must repeat this procedure in each browser you use—Mozilla Firefox (4½; macworld.com/3806) and Apple's Safari (4½; macworld.com/3611), for example—but the settings will apply not only when you search from the Google page, but also when you use your browser's toolbar search field.

Get Specific with Quotes Most people simply type one or more words into Google's search field, press return, and then scan the results for something that looks like a match. Increase the chances that what you're looking for appears among the first few hits by getting more specific with your searches. For example, by default Google looks for pages containing all the words you enter in the search field, in any order and in any location on the page. Suppose you remember reading the phrase "motion itself is impossible" in an article I wrote several years ago about an ancient Greek philosopher. If you do a Google search for `motion itself is impossible`, that article won't show up in the first 1,000 matches, because so many pages contain all four of those words somewhere. However, enclose the phrase in quotation marks (`"motion itself is impossible"`), and my article about Zeno's Paradoxes on Interesting Thing of the Day (www.itotd.com) is one of the top hits.

Leave Out What You Don't Want If you want Google to omit pages that contain a word, put a minus sign (–) in front of that word. For example, if you're searching for information on Pluto the astronomical body, you might want to weed out mentions of Pluto the cartoon character. If so, type `Pluto -Disney`.

Find This OR That Sometimes you don't want Google to search for *all* the terms you enter, but rather to show you pages with *any* of them. To broaden a search this way, type the word `OR` (in capital letters) between two words. If you search for `recipe ementaler mimolette`, for instance, you'll find only pages that mention all three words—*recipe*, *emmentaler*, and *mimolette*. If you search for `recipe emmentaler OR mimolette`, Google returns results that contain the word *recipe* and either the word *emmentaler* or the word *mimolette*.

Find Similar Words When searching the Web, you often know approximately what you're looking for but are unsure exactly how something may be phrased. For example, say you're looking for a wearable Bluetooth audio device, but you

ILLUSTRATION BY BEEGEE TOLPA

Expand Safari's Toolbar Options If you like the convenience of Safari's toolbar search field, but want to use something other than Google to search the Web, try a plug-in like Glims. Using its preferences, you can select any of numerous built-in search engines or add your own to the list.

don't know whether to search for *headphones, earphones, earbuds, headsets,* or any of numerous other similar terms. In that case, place a tilde (~), which means "words like this," in front of the word you're unsure of. Search for **`bluetooth ~headphones`**, and Google will return pages with all similar terms.

Change Your Search Engine

Although it may sound like heresy, Google isn't the only game in town. Despite Google's large index and generally excellent results, it doesn't even come close to indexing every page on the Web. In addition, because each search engine has its own algorithms for determining the order in which matches appear, you may find that you get more-useful results on some topics with another tool, such as Yahoo (www.yahoo.com), Ask.com (www.ask.com), Cuil (www.cuil.com), or the venerable AltaVista (www.altavista.com).

One reason more Mac users don't use other search engines is that Safari's built-in search feature is hard-wired to use only Google. Google is also the default search engine in other popular browsers, such as Firefox. But don't let that stop you.

Add Options to Safari If you'd like to stick with Safari, many third-party plug-ins let you add other search engines to the browser's toolbar—and most include other helpful features as well. David Watanabe's free Inquisitor (macworld.com/3681) adds predictive searching to Safari's search field: as you type, it guesses which search terms you want to use, much as Google does.

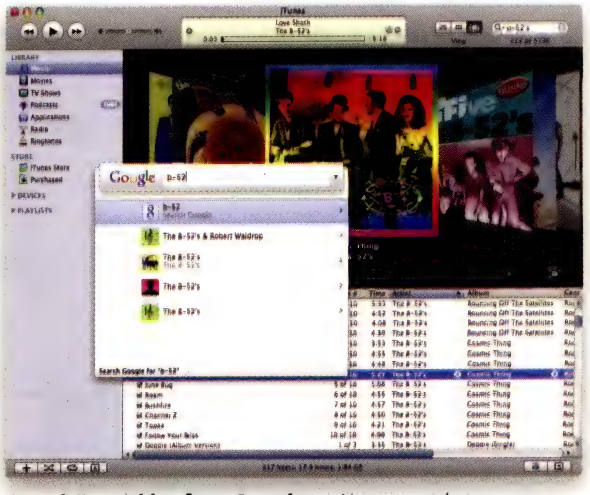
MacHangout.com's free Glims (www.machangout.com) offers predictive searching and lets you change or add search engines (see "Expand Safari's Toolbar Options"). Hao Li's $12 Saft (★★★★½; macworld.com/4346) lets you type an abbreviation for a search engine (use one that's included or add your own), followed by your search terms, into Safari's address bar—so you can bypass the normal search field altogether. For example, type **`osxh safari`** to search Mac OS X Hints (www.macosxhints.com) for tips on using Safari.

Adjust Other Browsers Most other Web browsers make it very easy to use whichever search engine you want. In Firefox, choose a different one by selecting it from the pop-up menu to the left of the search field; if you want one that's not listed there, select Manage Search Engines to add your own. Similarly, OmniWeb, Mozilla's Camino (★★★★; macworld.com/3401), Flock (★★★★½; macworld.com/3381), Alexander Clauss's iCab (★★★½; macworld.com/3403), and Opera Software's Opera (★★★★; macworld.com/3405) let you choose from several built-in search engine options or add your own.

Search without a Browser

If you usually need information from the Web when you're in your e-mail client or your word processor, you might prefer to use a search tool you can access *without* opening a browser first. If that's the case, you've got quite a few choices.

Search from a Contextual Menu If you're in, say, Apple's Mail or Preview and you encounter a term you'd like to look up on the Web, you typically copy and paste it into your browser's search field. Alternatively, you can select the term and drag it to Safari's icon on the Dock to do a Google search. However, to save yourself a couple of steps, highlight the term, control-click (or right-click), and choose Search In Google from the contextual menu. (This doesn't work with all programs.)



Search Everything from Anywhere No matter what program you're using, you can press a keyboard shortcut to make the Google Quick Search Box appear. It lets you search the Web, as well as the contents of your Mac, with a few keystrokes.

Try an Application Launcher Application launchers such as Blacktree's free Quicksilver (★★★★½; macworld.com/1247), Objective Development's LaunchBar (★★★★★; business license, €39; home license, €24; macworld.com/3545), and Many Tricks' Butler (★★★★★; payment requested; macworld.com/1246) make it easy to (among many other things) search the Web regardless of what program you're currently using.

For example, to use LaunchBar from anywhere, press control-spacebar to activate the program, and then type the first few letters of your favorite search engine (say, **goo** for Google). When the name of the search engine appears with the option Search Template next to it, press the spacebar again, type a search term, and press return. Your default browser will come to the fore with your search results loaded. Since there's no need to reach for the mouse, most people can generate this series of keystrokes in less than a second.

Explore Alternatives Ambrosia Software's $15 iSeek (★★★★★; macworld.com/4347) puts a Web search field right in your menu bar. It's set to Google by default, but you can adjust it to use the engine of your choice. Type your search term in this field and press return to display the results in your default Web browser. Waffle Software's Monocle (payment requested; macworld.com/4348) is similar, but instead of putting the search field directly in the menu bar, it requires that you click on a menu-bar icon to display a pop-up field.

Since each search engine provides different results, you may have to check a few before you get the results you need.

The free Google Quick Search Box for the Mac (macworld.com/4349) also displays a pop-up search box when you press a keyboard shortcut (see "Search Everything from Anywhere"). The Google Quick Search Box can search not only Google sites (including YouTube and Google Docs), but also Wikipedia.com and even programs, files, Address Book contacts, bookmarks, and other data on your Mac. (Note that this program is still considered a work in progress.)

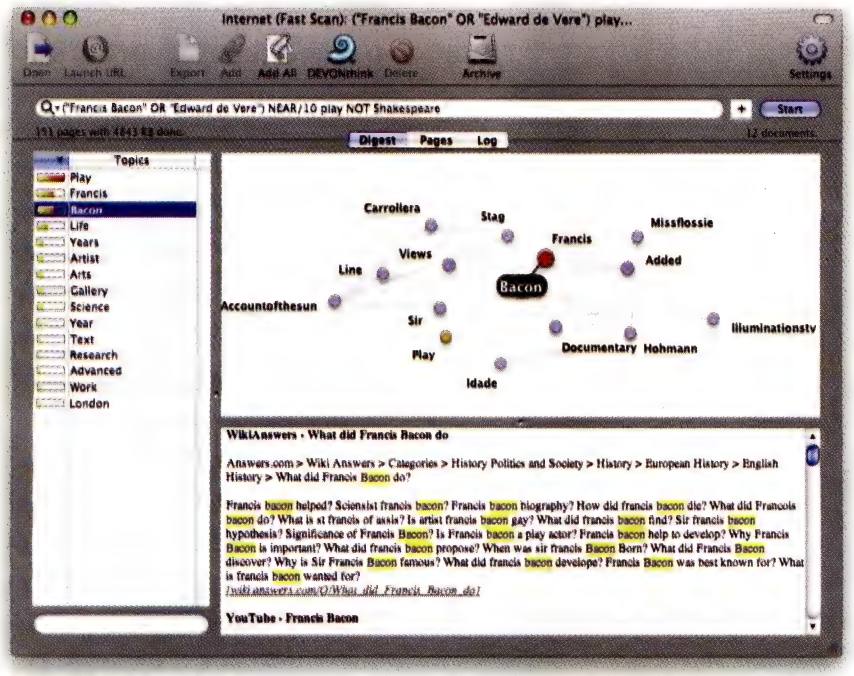
Search Multiple Engines at Once

Since each search engine provides different results, you may have to check a few of them before you get the results you need. Save yourself a couple of steps and use multiple search engines at once.

Use a Multiple-Engine Search Site The simplest way to do this is to visit a multiple-engine search site in your browser. For example, Dogpile (www.dogpile.com) compiles results from Google, Yahoo, Microsoft Live Search, and Ask.com, while PolyCola (www.polycola.com) provides side-by-side results from any two of seven engines, including Dogpile.

Get a Serious Search Tool If you're doing extensive research, consider a high-powered tool such as Devon Technologies' $50 DevonAgent (★★★½; macworld.com/3404). In addition to being a stand-alone Web browser, it's a full-featured research tool. DevonAgent lets you create complex searches that include Boolean operators, proximity terms, and filtering—spanning as many search engines as you like.

DevonAgent downloads and analyzes all pages that match your query and then presents you with a summary of just the results you're looking for. For example, you could have the program comb dozens of search engines for PDF files in which the name *Francis Bacon* or *Edward de Vere* appears within ten words of the term *play* but where the name *Shakespeare* is not mentioned (see "Beyond Basic Searches"). Even though these elaborate searches may take hours rather than seconds, they can turn up results that are far more specific, and more useful, than those of typical Web searches.



Beyond Basic Searches DevonAgent can run complex Web searches and then analyze the data. For example, select one of your keywords in DevonAgent's results window to see a network diagram showing how that term interrelates with other common terms that appeared in the search results.

Senior Contributor **Joe Kissell** is the senior editor of TidBits and the author of numerous e-books (www.takecontrolbooks.com).

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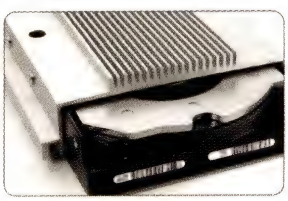
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Should You Upgrade to iTunes Plus?

Sound-quality and usage tips **BY CHRISTOPHER BREEN AND KIRK MCELHEARN**

One of the announcements Apple made during Macworld Expo was that all music sold by the iTunes Store would be iTunes Plus tracks, free of digital rights management (DRM) restrictions, and encoded at the higher-quality 256 Kbps, by the end of March.

Although new purchases are in the iTunes Plus format, that still leaves all of the old tracks you've amassed over the past six years from the iTunes Store. Apple changed its initial all-or-nothing upgrade policy to let you upgrade any albums or individually purchased songs on an à la carte basis, but it'll still cost 30 cents to upgrade each track, or approximately one-third of an album's current purchase price to upgrade an album ($10 albums will cost $3, for example).

Is it worth the extra expense for the greater flexibility that DRM-free tracks offer, or for the quality bump?

Upgrade Options After at first making the option to upgrade an all-or-nothing proposition, Apple now lets users upgrade albums or individually purchased tracks to iTunes Plus format.

Convert iTunes Plus to Other Formats

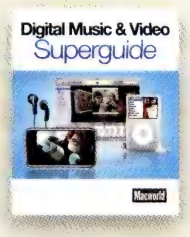
Music files sold by Apple are in Advanced Audio Coding (AAC) format, which is part of the MP4 specification. Aside from Apple's own offerings, other devices can also play AAC files: Microsoft's Zune, SanDisk's Sansa, several Sony devices (the PlayStation Portable, the Walkman, and some phones), the Sonos Digital Music Player, Logitech's Squeezebox, and some others. And a handful of software programs support AAC too.

But there are many more devices and applications that don't support AAC, including commonly used Windows programs such as Windows Media Player. However, nearly every digital music player can play back the more ubiquitous MP3 format, as can most home DVD players and car stereos (via MP3 CDs).

If you want to take advantage of the vast catalog of music available on iTunes (although Amazon.com also has a broad selection, iTunes still has many exclusive albums and bonus tracks, and in some areas has a wider range of music), why not buy AAC files and convert them to MP3 if you want to use them on non-Apple devices? Without DRM restrictions, you can now do so freely from within iTunes.

Converting these files with iTunes is pretty simple. Choose iTunes: Preferences, click on the General tab, and then click on the Import Settings button. If you haven't changed the default settings in iTunes 8.1, this will be set to AAC Encoder at 256 kbps (what Apple calls iTunes Plus). Choose MP3 Encoder from the first menu, then in the second menu choose Custom, and then choose 256 kbps. (Use this bit rate—the equivalent of the iTunes Plus AAC files' bit rate—so

Digital Music and Video Superguide



Want to know how to import music from CDs, cassettes, and LPs; bring order to your digital collection; sync content between your Mac, iPod, iPhone, and Apple TV; and convert video into iPod- and iPhone-compatible formats? Then visit macworld.com/4420.

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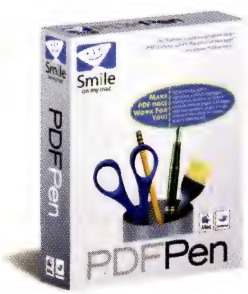

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you lose as little quality as possible.) Click on OK twice to save your settings.

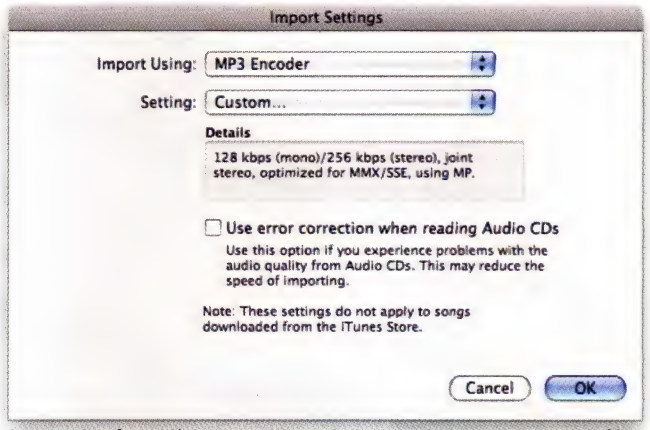
Next, create a playlist with the tracks you want to convert. Select them all, then choose Advanced: Create MP3 Version. iTunes will take a few minutes (depending on how many tracks you're converting) to make new MP3 versions of your files. To determine which file format the new tracks are in—they'll be filed together in your library with the originals—check your Recently Played playlist, or create a smart playlist with the conditions Kind Contains MPEG and Date Added Is *today'sdate*. Next, control-click on one of the tracks and choose Show In Finder. If iTunes organizes your music, you'll find all the tracks for a given album in the same folder; just spot the MP3 versions and copy them to another folder or device.

If you often find yourself alternating between one format for ripping your music from CD and another for converting files, you might want to use Doug Adams's Quick Convert script (macworld.com/4418). It lets you convert tracks using your choice of encoders, then restores your encoding preferences after conversion.

This technique works for iTunes Plus files, which are DRM-free and allow you to convert them to other formats. But what if you have older iTunes files with DRM? You can't use the same technique; iTunes will tell you that it can't convert protected files to other formats. So the trick here—which is a bit time-consuming—is to burn your music to CD, then rip it from the CD in MP3 format. There are also virtual burning applications that can automate the process.

Is the Quality Difference Noticeable?

If you own protected iTunes tracks, they are encoded at 128 Kbps, instead of 256 Kbps as for iTunes Plus tracks. Although the doubled bit rate sounds good on paper, how much difference does it really make in sound quality? It depends on the person listening. Many



Import Settings Change your iTunes import settings to convert music files to another format.

people swear their hearing is so acute that they can differentiate between different bit rates, or between lossless (AIFF, WAV, and Apple Lossless) and lossy (AAC and MP3) files.

So before paying lots of money to upgrade your tracks, try putting your ears to the test. Using whatever audio equipment you prefer, take a handful of CD tracks from some favorite CDs and rip them with different settings—Apple Lossless, AAC at 128 Kbps and 256 Kbps, MP3 at 160 Kbps and 256 Kbps, and MP3 at 256 Kbps converted from an AAC file encoded at the same bit rate—and set up a blind listening test.

One comparison track will be the Apple Lossless version. A second comparison track will be one of the files ripped with a lossy encoder. Have a friend play one and then the other. Switch back and forth a few times. Check which is which. Repeat a few times so that you eliminate chance. Repeat with other tracks. Where do you hear the differences? (Cymbals are a good place to start.)

Or, to help determine where *transparency* kicks in for your ears (the point where you can't tell the difference between the lossy and lossless version), rip your tracks at several bit rates—from 256 Kbps on down to 96 Kbps. Conduct the tests and see how you do.

The Wikipedia Codec listening test (macworld.com/4419) and its references will help you get started. Determining what you can and can't hear can be very beneficial. If you have a hankering to upgrade protected iTunes tracks to iTunes Plus for the alleged audio-quality bump, you should take the time to find out whether you can really hear the difference. And if you can't tell the difference between an original protected track and one burned to CD and then reimported to remove DRM, you can avoid the whole iTunes Plus upgrade issue on the grounds of both quality and flexibility.

If you want to take advantage of the vast catalog of music available on iTunes, buy the AAC files and convert them to MP3.

Additionally, you can celebrate the fact that you're a cheap audio date. If you really can't tell the difference between a 128-Kbps AAC file and one encoded at 256 Kbps, you've potentially doubled the number of songs you can fit on your iPod. And sometimes, quantity trumps quality.

Christopher Breen is a *Macworld* senior editor, and **Kirk McElhearn** is a *Macworld* senior contributor.

Get Great Photos in Low Light

Don't be a slave to your flash. Make the most of existing light. **BY DERRICK STORY**

Light is photography's essential ingredient. Abundant illumination makes our job easy—we simply compose and shoot. But what happens when the lights go down? Do we become slaves to the unflattering bursts of an electronic flash? Not at all. By mastering a few basic techniques, you can turn off the flash—or at least tone it down—to capture beautiful, evocative images.

Night Photography I took this image of the plaza across from the San Francisco Museum of Modern Art in natural light—thanks to my tripod, no flash was necessary.

Understand Your Flash

When your camera is in automatic mode, the flash goes on any time the lights dim. But you're not doomed to "deer in the headlights" snapshots. Almost all cameras offer flash-exposure compensation, which lets you tone down the burst of light that typically causes overexposed subjects.

When you access this feature, you'll most likely be greeted with a scale that has 0 in the center, with –1 and –2 to the left, and +1 and +2 to the right. Moving the marker to –1 means that the flash will use one f/stop less than usual. The result is often a more pleasing photograph—sometimes you can't even tell that the flash went off.

Another way to create more-flattering shots is to turn off the flash and work with existing light.

Know Your ISO

If you're going flashless, you must find a way to compensate for the lack of supplemental light. One option when shooting with a handheld camera is to increase the sensitivity of your camera's image sensor. You do this with the ISO setting. Choose ISO 400 to 800 for compact cameras, or ISO 400 to 1600 for DSLRs. Why do the two types of cameras have different ranges? The internal electronics in DSLRs are better suited for working in low light than are the electronics in compacts. A low-light exposure at ISO 800 on a compact will show more image noise than on a DSLR. (Instead of smooth tones, you'll see a bit of digital texture.) Some compact cameras offer an auto-ISO setting, which makes these decisions for you. But before you turn it on, refer to your owner's manual to see what the range is. If, for example, the auto-ISO range on your compact camera is 100 to 800, you should consider using this setting. No matter which number the camera chooses in that range, you'll probably be happy with the picture. On the other hand, if the auto-ISO range on your compact is 100 to 3200, don't use it. The images captured at 1600 and 3200 won't be attractive.

Avoid Camera Shake

With either type of camera, the amount of time the shutter stays open during the exposure increases as the light gets dimmer, even after you increase the ISO. The longer exposure lets more light reach the sensor, increasing the odds for a nicely exposed picture. The downside is that longer exposures on handheld cameras increase the risk of camera shake and can produce blurry photos.

Most photographers combat camera shake in one of three ways. The first two methods also involve increasing the ISO, as mentioned earlier. The third, using a tripod, doesn't require ISO adjustment. Here's what you can do:

Change Your Lens If you're using an SLR, try attaching a fast lens that lets more light pass through to the image sensor. Every lens has a maximum aperture opening, measured in f/stops. A zoom lens that comes as part of a camera kit may have a maximum aperture of f/3.5. But a single focal length 50mm lens may have a maximum aperture of f/1.8. The lower the f/stop number, the more light can pass through the lens and the less time the shutter has to remain open.

Many photographers who shoot with existing light use a fast lens in combination with image stabilization and a higher ISO to get crisp exposures without having to carry around a tripod.

Turn on Image Stabilization Image stabilization (IS), which allows the camera to electronically offset unsteadiness during exposure, is a wonderful technology that can often compensate for as many as three shutter-speed settings. What does that mean? Shutter-speed settings correspond to fractions of a second and are listed in this sequence: 1/4, 1/8, 1/15, 1/30, 1/60, and upward. If you have steady hands, you can often avoid camera shake at 1/30 or upward, as long as you're not using a telephoto lens (which increases magnification and changes the whole equation). But if you're in dim lighting and the camera determines that you need an exposure of 1/8 of a second, you'll need IS to avoid blur. With IS turned on, the camera can compensate for shakiness, so even though you're actually shooting at 1/8, your electronic helper gives you the effect of shooting at 1/60 of a second. This is a huge help.

Custom Color

Use this table as a guide for setting your camera's white balance

TYPE OF LIGHTING	WHITE-BALANCE PRESET	RESULT
Sports arena action shots	Sun icon	Slightly warms image to offset coolish lights
People in a window-lit room	Cloud icon	Stronger warming effect than sun icon, to offset bluish color cast
People in a tungsten lamp–lit room	Lightbulb icon	Cools excessive reddish tones for more natural color
People in a fluorescent lamp–lit room	Fluorescent tube icon	Adjusts tint to offset greenish cast
Illuminated exterior of a building at night	Start with the sun icon and examine on LCD; may have to experiment with other settings	Colors tend to be cool; be careful that you don't overcompensate with the cloud icon

Keep in mind, though, that when you're photographing people in low-light conditions, you have to deal with human motion as well as camera shake. (Image stabilizers only steady the camera—they can't stop people from moving.) In those situations it's best to increase the ISO and use as fast a lens as possible to keep your shutter speeds as high as possible. This technique freezes subject movement.

Use a Tripod If your camera doesn't have IS, then mount it on a tripod. With a tripod you can shoot at any shutter speed you want. You can even lower the ISO to 100, which will curtail image noise and let the camera make a very long exposure. A tripod is especially helpful when shooting buildings and landscapes in low light, since you don't have to worry about subject movement.

Coping with Color Balance

When you move indoors, you'll notice that your pictures display a variety of unusual color casts. Interiors illuminated by fluorescent lighting have a ghoulish greenish tint, while tungsten-lit scenes seem overly reddish. These lighting conditions often exceed your camera's ability to correct them using its auto-white-balance feature. Just as you've taken control of the lighting by turning off the flash, you can wean yourself off automatic color correction, too.

Go to your White Balance menu. You should see a sun, a cloud, a lightbulb, a fluorescent tube, and a few more icons. These white-balance presets tell your camera about the lighting you're working in (see "Custom Color"). For more advice on correcting color, go to macworld.com/4424.

If you forget to set your white balance before you shoot or you can't correct it, try converting your image to black-and-white after the shoot. Existing-light pictures in gray scale usually look terrific, and many people will appreciate your artistic eye.

Derrick Story is the author of *The Digital Photography Companion* (O'Reilly Media, 2008). He also hosts a weekly podcast at www.thedigitalstory.com.

Fast and Simple Flash Diffusers

One way to soften the light from a flash is to use a diffuser. Here are three easy options.

To soften the light from a hot-shoe flash attached to your SLR, do what photojournalist Steve Makris does: fold a white sheet of 8.5-by-11-inch paper at two corners and attach it to the flash with a rubber band. Instead of pointing the flash directly at the subject, angle it upward. When you make an exposure, the light bounces off the large sheet of paper, creating a nice diffused effect.

If a hot-shoe flash is too much to lug around, consider Gary Fong's Puffer pop-up flash diffuser (store.garyfonginc.com). It works with most DSLR pop-up flashes by positioning a translucent dome in front of the flash. It's not as effective as diffusing a shoe-mount unit, but it does help and it costs only $20.

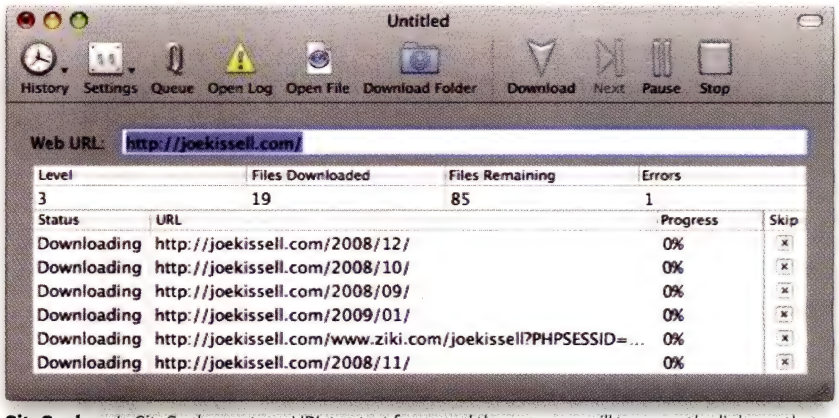
Got a compact camera? I've had good luck holding the open end of a clear film canister over the flash head so that the flash bursts into it. It softens shadows and warms up the light. This works best for close-up photography.

Steve Makris on Location Photojournalist Steve Makris uses a sheet of white paper as a light diffuser.

Working Offline

Keep up with e-mail and the Web without Net access **BY JOE KISSELL**

Although the Internet seems to be everywhere these days, there are still times when it's beyond your reach—on most planes, for example, or anyplace that lacks a hotspot. But you can still do two things that typically require a Net connection—use e-mail and browse the Web—even when you're offline. You just need to be prepared ahead of time.



SiteSucker In SiteSucker, enter a URL to start from, and the program will traverse the links on that page to the level you set, downloading all the files to your hard disk.

E-mail

You obviously can't send or receive e-mail without an Internet connection. But you *can* read messages you've already received, and compose replies and new messages; those last two will simply wait patiently until you're online again.

Before You Leave If you use one Mac for e-mail and all of your accounts use the POP protocol, incoming messages should already be available offline. But if your e-mail client skips or only partially retrieves large messages, you should change that setting before you hit the road.

In Mail, choose Mail: Preferences, click on Accounts, and select your POP account in the list on the left. On the Advanced tab, make sure the Prompt Me To Skip Messages Over field is empty.

In Entourage, choose Tools: Accounts, click on the Mail tab, and double-click on your POP account. In the Edit Account window, go to the Options tab and make sure the Partially Receive Messages Over box is deselected.

If you have one or more IMAP, MobileMe, or Exchange accounts, your e-mail client still likely downloads local copies of your messages—but you should check a few settings to be sure.

In Mail, choose Mail: Preferences, click on Accounts, and select your IMAP, MobileMe, or Exchange account in the list on the left. On the Advanced tab, make sure the Keep Copies Of Messages For Offline Viewing pop-up menu is set to All Messages And Their Attachments.

Entourage syncs Exchange accounts automatically. If you have an IMAP account, choose Tools: Accounts, click on the Mail tab, then double-click on the IMAP account name. In the Edit Account window, go to the Options tab. Make sure Always Download Complete Message Bodies is selected, and that In Inbox Only and Partially Receive Messages Over are deselected. Also select Live Sync and Connect Immediately On Launch; deselect Only Connect To Inbox and Disconnect From Server After *X* Minutes.

If you adjust your mail client's settings as I just described, both Mail and Entourage will automatically sync your server-based mail folders with their local counterparts. Still, it doesn't hurt to check your e-mail manually one last time just before leaving. If you use Mail, which performs a full sync only periodically, you should choose Mailbox: Synchronize All Accounts and wait a few minutes before disconnecting from the network.

Google Gears for Gmail If you use Google's Gmail and access your e-mail through a Web browser (rather than a stand-alone e-mail client), you can still get access to saved mail and queue new messages when you're offline. But first you have to install Google Gears.

Start by downloading the software from gears.google.com and following the installation instructions. Next, log in

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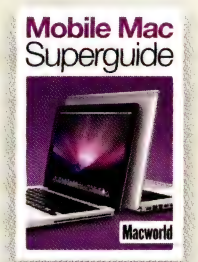

This essential guide to using a Mac on the road explains everything from buying and trouble-shooting a laptop to getting online, accessing files remotely, and keeping your data safe. For more information, see macworld.com/superguide/.

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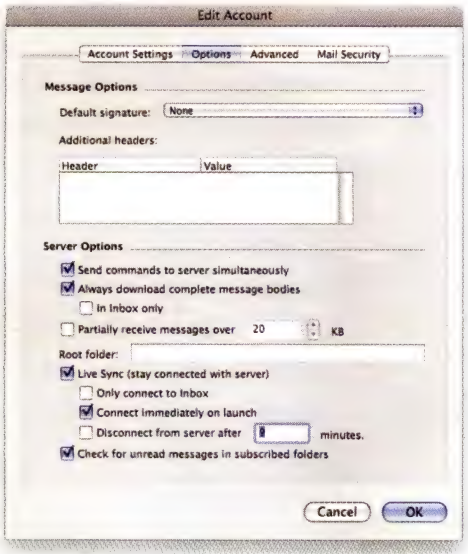
to your Gmail account, click on the Settings link, and then on the Labs link. Select Enable for the Offline option and then click on Save Changes. Click on the Offline link at the top of the window, and then on Next.



Entourage IMAP Sync To make sure that Entourage downloads all IMAP messages in their entirety and keeps them in sync automatically, configure your account settings as shown here.

Now your mail should sync. (This may take several minutes.) When the sync is finished, you can safely go offline.

On the Road Entourage will automatically know that you're offline, allowing you to continue working with messages you've downloaded and queuing any outgoing messages for later delivery. Mail does the same thing, but it may slow down for a while when trying (and failing) to connect to your mail servers. To speed it back up, choose Mailbox: Take All Accounts Offline.

If you're using Gmail offline, either double-click on the Desktop shortcut (if you created one) or enter `http://mail.google.com/` in your browser. You can browse locally stored messages; any new messages you create will be sent when you reconnect to the Gmail page.

When You *Return* Once you've reconnected to the Internet, Entourage should automatically send any messages in your outbox, download new messages, and change the locations on the server of any messages that you've relocated locally. In Mail, choose Mailbox: Take All Accounts Online. If there are still messages waiting to be sent after ten minutes, quit Mail and reopen it.

Web Browsing

If all you need is information from a finite selection of Web pages, you can package up their content and take it with you to read, even when you lack Net access.

Before You Leave The trick to browsing the Web offline is to save all the pages you think you might need, in an appropriate format, before you lose Internet access.

Safari lets you save Web pages—including graphics, style sheets, and other

related files—in a *Web archive*. To save an archive in Safari, simply choose File: Save As. In the Format pop-up menu at the bottom of the Save dialog box, make sure Web Archive is selected. Select a name and a location to save the archive, and click on Save. That's it.

Firefox can do much the same thing with the help of extensions. Once you install the free ScrapBook (macworld.com/2228) extension, you can then save a page by choosing ScrapBook: Capture Page (⌘-shift-L). The free Breadcrumbs (macworld.com/4422) extension is even simpler: you merely browse to the pages you want to save; Breadcrumbs will save a copy of each one, which you can search for later.

If you'll need more than a few pages from a site but don't want to archive them individually, you must use more-powerful tools. Numerous programs—including Getleft (free; macworld.com/4421), SiteSucker (donation requested; www.sitesucker.us/home.html), WebCopier for Mac ($30; www.maximumsoft.com), and Web Devil ($35; www.chaoticsoftware.com)—can crawl an entire Web site and save it as a set of files on your hard disk.

These Web crawlers can take hours, or even days for a large site, to do their work, so start early. And be sure to read the instructions so you can reasonably limit the depth and breadth of what gets downloaded. (Trying to download the entirety of, say, Apple.com or CNN.com would take eons and fill up your hard disk.)

Safari lets you save Web pages—complete with graphics, style sheets, and other related files—in a Web archive.

On the Road If you've saved Web archives in Safari, you can view them by double-clicking on one of the archive files in the Finder. Safari opens it and displays something that looks and works just like the original (except for any server-based components such as database access). The same goes for any of the Web crawlers—simply open the top-level HTML file for a given site (usually called index.html) in your favorite browser, and then navigate the site as you normally would.

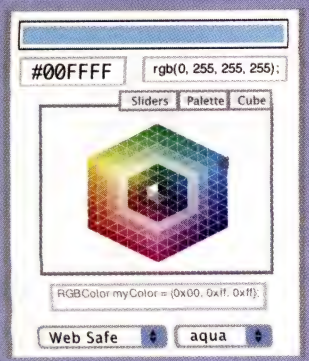
In Firefox, if you used the ScrapBook extension, you can view saved pages by choosing a page name from the ScrapBook menu. To search for a page saved using the Breadcrumbs extension, choose Breadcrumbs from the pop-up menu to the left of the search field in the Firefox toolbar and search for a word from any previously visited page.

Senior Contributor **Joe Kissell** is the senior editor of TidBits and the author of a number of e-books (www.takecontrolbooks.com) about OS X.

EazyDraw Version 3.0

WebColorPicker

A RGB / hexadecimal plugin for your Mac OS X color panel.



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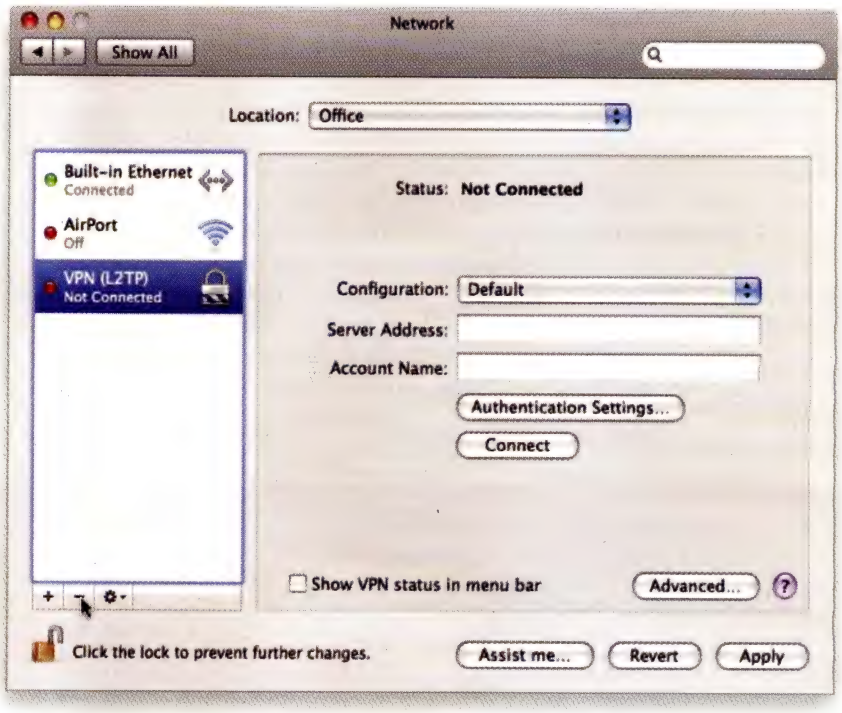
Troubleshoot Your Network

Six tricks that can resolve a host of networking problems **BY FJ DE KERMADEC**

Does your network seem to have a mind of its own? Does it suffer from intermittent slowdowns or even complete outages? The longer you use a network at home or at work, the flakier it can get. As you add more machines and change network configurations, that flakiness can get worse.

That's why I've come up with the following list of troubleshooting techniques to help alleviate a wide range of networking problems. These tips won't cure every problem, but they're worth a try when your network is acting up and you don't know what else to do. They're also useful in setting up a new network, as they can ensure fewer problems over time.



Disable Network Interfaces If you don't use all your network interfaces, you can delete the unused ones, or disable them through the drop-down menu (with the cog icon) in the Network preference pane.

Buy Better Cables

All too often, perfectly good networking hardware is connected with random bits of old, low-quality cable. Bad cables can cause many problems: packets can be dropped, increasing latency; your Internet connection may become intermittent; and jacks can fall out of their sockets, breaking that connection altogether.

You can nip such problems in the bud by upgrading your network with fresh copper from a reputable supplier. If your hardware supports Gigabit Ethernet, make sure you use a Cat 5E or Cat 6 cable. Always use the shortest cables possible; there's no need to use the 25-foot-long wires that often ship with home equipment, when all you need is a 3-foot patch cable. Be sure there is no undue pull on any of the jacks. Also, avoid sharp bends or pressure that might cause the cable to weaken and fray as it ages.

Once your network is laid out, use nylon straps or electrical tape to keep cables firmly in place and away from pets, vacuum cleaners, and erring feet; don't use plastic tie wraps, which can damage wires.

Manage Network Interfaces

Your Mac can accept multiple streams of network traffic over each of its network interfaces. However, that can create network snafus—when, for example, you have an Internet connection via Ethernet to your router, but then your Mac also connects wirelessly to your neighbor's Wi-Fi.

To prevent such confusion, disable network interfaces you don't use. To do so, select the interface you don't plan on using in the Network preference pane. Then either click on the minus sign (–) button at the bottom of the window or select Make Service Inactive from the drop-down menu with the cog icon.

Also, make sure the network interfaces appear in order of preference; if you typically use Ethernet to connect to the Internet, drag it to the top of the list of network interfaces.

Refresh Your DNS

If your browser takes a while to load a site after you enter a URL or click on a link, look down at the status bar. There you may see a message indicating that the browser is "looking for" (Firefox) or "contacting"

(Safari) the site, without success. If that's what you see, the problem may be with the Domain Name System (DNS), the service that turns plain-language Net addresses such as www.macworld.com into numerical addresses that the Internet's routers understand.

The first fix is to flush your DNS cache. Open Terminal and, at the command prompt, type **`dscacheutil -flushcache`**. That will clear out bad DNS references that OS X might be trying to use.

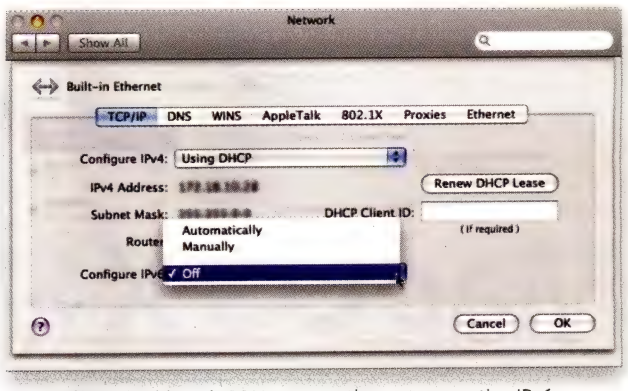
The other, more permanent solution is to switch DNS servers. Your ISP no doubt supplies DNS services of its own; the addresses of those servers are likely embedded in your router's configuration. But you can switch to any DNS server you like. For example, some users like OpenDNS (www.opendns.com) because, in addition to resolving Net addresses, it can help prevent phishing attacks. DynDNS.com (www.dyndns.com) is another good option.

Whichever DNS service you choose, you'll have to update the DNS fields on your router's configuration screen. The precise steps involved will vary depending on your router; read the manual that came with it to be sure. Assuming you're using DHCP, your router should then pass those DNS settings along to your Macs.

Limit Your NAT

Network Address Translation (NAT) allows routers to present a single IP address to the outside world but then distribute multiple internal IP addresses to your network. This is what makes simple home networking possible.

But if you have multiple NAT devices on your network dealing out those internal addresses, your network could break down into small, isolated clusters, which can cause connectivity problems.



Turn Off IPv6 Although OS X supports the next-generation IPv6 network address architecture, few other home networking devices or ISPs do. That's why it's OK to disable it.

To prevent this, make sure that you've enabled just one NAT device—preferably your router—on your network, and then disable the others. Enabling and disabling NAT is usually a matter of checking or unchecking a box in the hardware's configuration screen and then rebooting. Again, check the documentation for specifics.

Some people consider NAT a security measure, because it creates a wall of sorts between the Internet and your network. But you should implement a real firewall—either the one in your router (if it has one) or OS X's built-in firewall—even if you've implemented NAT.

Disable IPv6

IPv6 is a network addressing scheme that will, in theory, someday replace the IPv4 addressing architecture most commonly used today. Mac OS X supports IPv6. But until home routers and residential ISPs do likewise, there's no need to use it. In fact, IPv6 can cause headaches when you're troubleshooting some network services (such as AirTunes). So unless you have a good reason not to (for example, you use Back to My Mac), you should just disable it altogether.

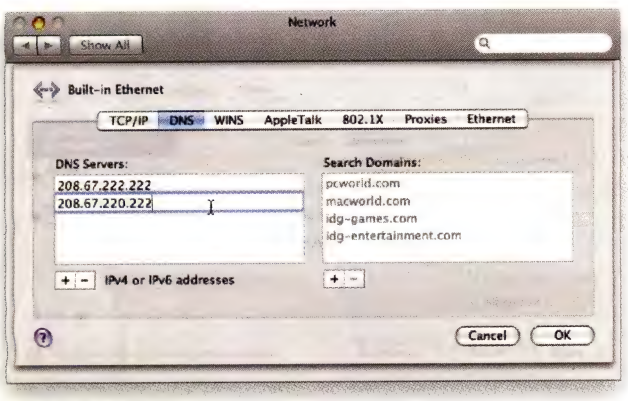
To do so, click on the Advanced button in the Network preference pane to access the options of your network interface. On the TCP/IP tab, select Off from the Configure IPv6 drop-down menu. If your router or other network devices are IPv6-savvy, their manuals should mention it and show you how to disable that feature.

Get a Fixed IP

Most home networks rely on dynamic IP addresses from their ISPs. This means that the network address the outside world uses to access your home network changes from day to day. This can be a real hassle when you want to access it remotely.

That's one reason it can pay to request a static IP address from your ISP. Such an address can have the additional benefit of improving the overall reliability of your connection.

If your ISP will give you a static address, you usually just have to tell your router about it; there's no need to reconfigure OS X. Your router's configuration system (via AirPort Utility or a Web page) should have a screen titled Internet (Apple), WAN Settings, or DSL/Cable Configuration. A menu or radio button should be switched from something like "obtain address automatically" to "manual address." Enter the IP address, gateway, and subnet mask assigned by your ISP, along with its DNS servers or ones you choose.



Switch to OpenDNS If your computers are taking a long time to look up Web sites, switching to a third-party DNS service such as OpenDNS could help.

FJ de Kermadec is a writer and consultant living in Paris.

Help Desk

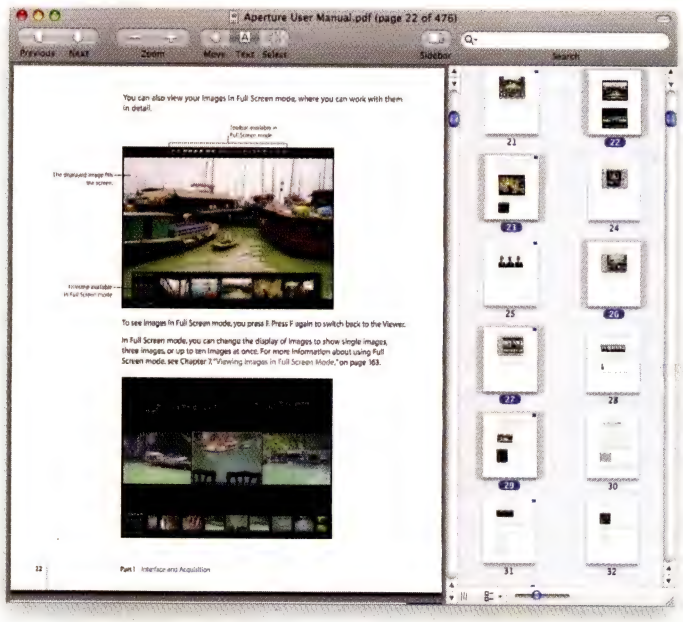
Mac OS X Hints

The insider tips you won't get from Apple **BY ROB GRIFFITHS**

Print Noncontiguous Pages in Leopard's Preview

You can use the Mac's Print dialog box in any program to print a single page or a range of pages, but you can't use it to print a *noncontiguous* selection of pages—say, pages two, four, five, and nine. Luckily, in Mac OS X 10.5 (Leopard), Apple's Preview lets you do just that.

Open a multiple-page PDF in Preview (/Applications) and make sure that the sidebar is visible (View: Sidebar). Hold down the ⌘ key and then click on the thumbnail for each page you'd like to print (see "Print Selected Pages"). With more than one page selected in the sidebar, the File: Print menu item changes to File: Print Selected Pages. Choose that, or just press ⌘-P, and you'll print the selected pages.



Print Selected Pages Using Preview in OS X 10.5, it's easy to print noncontiguous selections of pages—just hold down the ⌘ key as you click on page thumbnails in Preview's sidebar. Once you have selected your pages, choose File: Print to print just those pages.

Temporarily Disable Laptop Screen Dimming

If you use a laptop on battery power, you're probably well aware of its penchant for slightly dimming the screen after a period of inactivity. This dimming helps reduce energy consumption, thereby stretching battery life. But it can also be very annoying if it happens when you're in the middle of something—for example, when you're reading a long story on a Web page.

You can permanently disable this feature by opening the Energy Saver preference pane, selecting Battery, clicking on the Options tab, and then deselecting the Automatically Reduce The Brightness Of The Display Before Display Sleep option. However, you'll lose the option's battery-saving benefits even when dimming your display makes sense—like when you walk away from your machine for a minute or two. A nicer solution would be a way to *temporarily* disable this option when you don't want it active. You can do that with the Desktop & Screen Saver preference pane.

Go to System Preferences and open that panel, click on the Screen Saver tab, and then click on the Hot Corners button. In the sheet that appears, decide which screen corner you'd like to use. (I use the upper right corner.) Click on the menu button next to that corner. In the menu that appears, select Disable Screen Saver and then click on OK.

From now on, when you start reading a long document—or do anything else where you'd rather not have the screen go dim—just flick the cursor into your "do not activate" corner, and the screen will no longer dim. After you've finished

Have a Hint to Share?

Go to MacOSXHints.com to submit it. This column was based on tips from John I. Clark, Josh Farr, and other anonymous contributors. Each month, the author of our favorite tip receives the *Help Desk* mug.

MUG PHOTOGRAPH BY PETER BELANGER; ICON BY PAUL HOWALT

reading, move the mouse out of the hot corner, and the screen dimming function will become active again.

Easily Copy Passwords from Keychain Access

Many programs—Apple's Safari and Mail, for example—use your Mac's built-in keychain to securely store user names and passwords. You can use the Keychain Access program, in the /Applications/Utilities folder, to see and work with this stored information. If you forget a password, for instance, go to the long list of accounts in Keychain Access, control-click (or right-click) on the account's name, and select Copy Password To Clipboard from the contextual menu. Enter your administrator's password in the authorization box and press return. The password is now on your Clipboard. To use it, just switch to the place where you need the password and press ⌘-V to paste it into the password field.

Reveal Obscured Desktop Icons

OS X allows you to move the Dock to various sides of your screen—left, bottom, or right. Just hold down the shift key and then drag the Dock by clicking and holding the line that separates its left and right sections. (Alternatively, you can change the Position On Screen option in the Dock preference pane.) However, if you move the Dock from the bottom of the screen to the right or left, it will cover any icons you have on that area of your desktop. (The right side of your screen is usually more troublesome in this regard, because that's where icons appear by default on the desktop).

To get access to the obscured icons, you can hide the dock by pressing ⌘-option-D, of course—but that's a bit of a hassle. Instead, click on the desktop and then select View: Clean Up. When you do, the icons will magically move out from under the Dock on their own (see "Clean Up Your Desktop").

Clean Up Your Desktop Does your Dock occasionally obscure your desktop icons, as seen here? You can move them out from under it automatically by clicking on the desktop and selecting View: Clean Up.

Start iChat without Logging In to Accounts

If you use Apple's iChat or the open-source Adium (www.adiumx.com) and have multiple accounts, there may be times when you want to log in to one account but not the rest. For example, say you have a work account and a personal account. Usually, you like to log in to both, so you've left the Automatically Log In preference enabled in your chat program. On the weekends, though, you'd rather not log in to the work account and immediately get snagged by coworkers working overtime. That means you have to either disable the preference or manually log out. Either way, your chat program will flash your availability to everyone on your buddy list before you log out.

Instead, try this alternative. Start iChat (or Adium) while holding down the shift key. When the chat program launches, none of your accounts will be logged in. Now you can manually log in to only those accounts you'd like to activate.

Senior Editor **Rob Griffiths** runs the MacOSXHints.com Web site.

POWER TIP OF THE MONTH

Set Half-Star Ratings in iTunes

Apple's iTunes has long supported the ability to rate (and display) half-star ratings for songs, but until recently, you had to use an AppleScript to actually set them. Now, thanks to a newly discovered iTunes preference, you can set half-star ratings directly within iTunes.

To enable this feature, quit iTunes and then open Terminal (/Applications/Utilities). In Terminal, type this command and then press return (you can copy and paste the command from our Web site by going to macworld.com/4410):

```
defaults write com.apple.iTunes allow-half-stars -bool TRUE
```

Now relaunch iTunes. Nothing will seem to have changed. But if you click and drag slowly on a song's Rating field, you'll see ½ indicators as you drag across the rating. (You can also try clicking directly between stars, but I find this more difficult than dragging to a half-star position.)

If you ever decide that you don't need half-star ratings, quit iTunes, open Terminal, and repeat the above command, replacing **TRUE** with **FALSE**.

WHAT'S ONLINE

Group Minimized Windows A Unix tweak and a handy utility can help (macworld.com/4411).

Bring Order to Your Fonts with Font Book Learn how to get organized with Apple's built-in font program (macworld.com/4412).

Terminal Audio Tricks Leopard adds a few new Unix tools for converting and playing music files (macworld.com/4413).

Mac 911

Solutions to your most vexing Mac problems **BY CHRISTOPHER BREEN**

Create Slide Shows with Titles and Watermarks

Q: Is there a way to create title slides and watermarks for iPhoto '08 slide shows?

Bill Curry

A: Some people find it useful to introduce their slide shows with a title slide or to stamp all their business-related slide shows with a ghosted, or *watermarked*, company logo. Unfortunately, Apple's iPhoto '08 (♦♦♦♦; macworld.com/3061) and iPhoto '09 (♦♦♦♦; macworld.com/4319) are both limited in this regard. If you want titles and watermarks in your slide shows, you need to look elsewhere.

If you'd rather not spend any money, consider using Apple's iMovie instead. To create a slide show in iMovie '08 (♦♦♦½; macworld.com/3097) or iMovie '09 (♦♦♦♦; macworld.com/4407), drag pictures from the Photos browser to the project window on top. To add a title slide, select a title from the Titles browser and drag it between two images. You can also place it before or after your pictures to produce opening or closing titles.

iMovie automatically creates a black frame on which you can add text. Click on the blue title icon to bring up the text editor. You can also place titles over images by dragging the blue title icon over the picture on which you'd like the text to appear. In this way, you can create a kind of watermark—an image that appears in your slides throughout the slide show.

Likewise, if you already have any version of Apple's Keynote (part of the $79 iWork suite), you can use it to assemble a decent slide show, complete with titles, transitions, and watermarks. But Keynote doesn't offer the pan-and-zoom Ken Burns effect that many people like. It also can't automatically create a slide show that is the same length as a particular piece of music—something you might do, for instance, when creating a slide show of a romantic occasion accompanied by your favorite song.

If you often want to use titles and watermarks in your slide shows, your best bet is to get a copy of Boinx Software's $129 FotoMagico Pro (♦♦♦♦; macworld.com/2833). This program makes it easy to create and place text over slides, as well as to add watermarks to your slide show (see "FotoMagico Pro Watermark"). FotoMagico also lets you generate custom titles for each slide and even animate them, plus it supports music soundtracks.

FotoMagico Pro Watermark Among FotoMagico's many talents is the ability to plaster a watermark on slide-show images.

Have a problem?
Go to the Mac 911 forum (macworld.com/2467) for help with your misbehaving Mac or applications.

Import Old Contacts into Entourage

Q: I have some of my contacts in an old version of Apple's Address Book and some in AppleWorks. However, I now run OS X 10.5.6 and use Microsoft Entourage 2008. How do I get the information out of those older programs and into Entourage?

Donna Younglove

A: Importing contacts from Address Book into Entourage couldn't be easier. In Address Book, choose the All entry in the Group pane, select File: Export: Export Group vCard, and save the file to the desktop. Open Entourage, select the address book icon at the top of the window, and drag the vCard file you created into the main window. This adds the contacts contained within the vCard to Entourage.

Bringing over contacts from AppleWorks (which Apple has discontinued) is just the tiniest bit trickier. Most likely your addresses are stored in an AppleWorks database. Launch AppleWorks, open that database, and go to File: Save As. In the Save dialog box that appears, choose ASCII Text from the File Format pop-up menu, save it as a document, name the file, and click on Save.

In Entourage, go to File: Import. In the Import window that appears, choose the Contacts Or Messages From A Text File option and click on the arrow icon. In the Choose A File Type window, select Import Contacts From A Tab- Or Comma-Delimited Text File and go to the next window. In the Import Text File window, navigate to the AppleWorks file you just created and click on Import.

This brings up an Import Contacts window. Here you'll drag entries from the Unmapped Fields column on the right to the corresponding Mapped Fields entries on the left. For example, if an Unmapped Fields entry reads *Smith : Jones,* drag it next to the Last Name field on the left so that the two names appear next to each other. (Why Entourage inserts the last names from the first two records, I don't know.) Do this for all of the entries in the Unmapped Fields column. When you're done, click on Import.

Note that after you import these contacts, Entourage will ask if you'd like to save this mapping. If you plan at some point to import other contacts from AppleWorks, you should say yes so that you don't have to do all this field mapping again. The next time you import address files from AppleWorks, all you have to do is choose your saved mapping from the Map Fields Using pop-up menu that appears at the top of the Import Contacts window.

ICONS BY PAUL HOWALT

Bugs & Fixes BY TED LANDAU

Prevent Installation Error When you install an OS X update, the installer may freeze as the message "Configuring Installation" appears. Apple eradicated this bug as of the OS X 10.5.6 update. However, you may still see this error while attempting to install the very update that fixes it! If you do, go to the /Library/Updates folder and delete its contents.

Fix a Blue-Screen Crash After using Apple's Software Update (Apple Menu: Software Update), you may get a blue-screen crash at startup. If so, a likely fix is to trigger a Safe Boot by restarting your computer while holding down the shift key. Safe Boot disables all nonessential processes, often allowing you to start up when you would otherwise get a crash. As of OS X 10.5.6, it also deletes the dynamic loader shared cache located in the /var/db/dyld directory. A corrupt cache here can cause a blue-screen crash. Once you restart normally, your Mac will create a fresh copy of the deleted cache. That should take care of the problem.

Fix Mail Crashes Although Apple intended to fix a number of Mail problems with the OS X 10.5.6 update, the update can actually *cause* Mail to quit unexpectedly. To fix this, install Mail Update 1.0. (Software Update will show this only if you need it.) If you still have problems after running the update, look in *youruserfolder*/Library/Mail/ Bundles for third-party Mail plug-ins such as Christopher Atlan's $30 Letter Opener (macworld.com/3418) or Sente's free GPG-Mail (macworld.com/4425). These may be incompatible with the latest version of Mail. Check for newer versions of the plug-ins. If they're not available, delete the current versions for now.

Office 2008 and Spaces Don't Mix Microsoft Office 2008 applications, especially Word, do not work well with Leopard's Spaces feature. Neither Microsoft nor Apple has provided a fix, despite numerous updates to both Office and Mac OS X 10.5, so it looks like this bug may remain for a good while longer. Symptoms include an inability to bring Word document windows to the foreground by clicking on them, an inability to assign two Word documents to separate spaces, and plain old Office program crashes. These problems should happen only if the Microsoft Office Toolbox is open. The only certain workaround for now is to not use Spaces if you plan on using Office 2008. At the least, don't switch between different spaces while any Office 2008 app is open.

Senior Contributor **Ted Landau** is the founder of MacFixIt (www.macfixit.com). Share your problems at bugs@macworld.com or on Macworld.com's Mac 911 forum.

Customize Word's Toolbars

Q: In older versions of Microsoft Word, there were buttons on the toolbar for cut and paste. They don't appear in the latest version of Word. Do you know how to make these toolbar buttons appear?

Barbara Van Gorder

A: The key to populating Word's toolbars with the commands you want is the Customize Toolbars And Menus feature. You'll find this option under the View menu or by control-clicking on the toolbar and choosing it from the contextual menu that appears. In the Customize Toolbars And Menus window, click on the Commands tab and choose Edit from the Categories pane to display a list of Edit commands on the right. The third, fourth, and fifth entries are Cut, Copy, and Paste (see "Customize Word Toolbars"). To add those commands, just drag them one at a time to any of Word's toolbars.

If, in the future, you want to delete or change the position of the icons you added, you must go into the Customize Toolbars And Menus window again.

Once the window appears, you can move icons around to rearrange them, or drag them off the toolbar to remove them.

If you don't want to add commands to Word's default toolbars, you can also make your own custom toolbar and fill it with your most-used commands. Open the Customize Toolbars And Menus window again, go to the Toolbars And Menus tab, and click on New to create a new toolbar. Give it a name (*My Toolbar,* for example), click on the Commands tab, and start dragging items to the toolbar.

Bulk-Edit Address Book Data

Q: Recently, a large company I do business with moved its headquarters, and I'd like to change the address for all my contacts at that company. Is there a way to change multiple contacts at once in Leopard's Address Book?

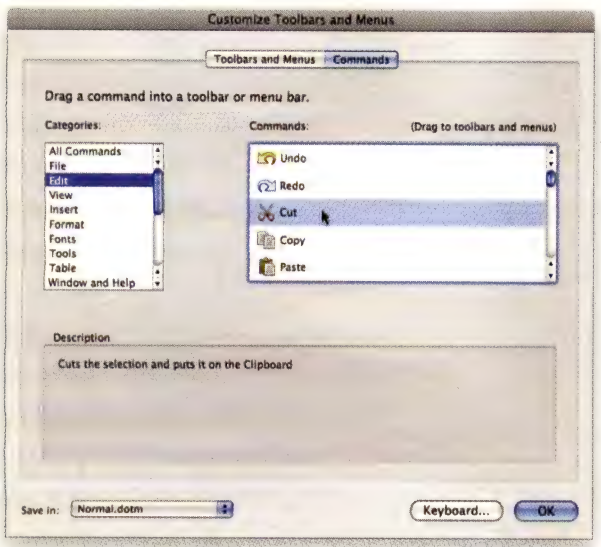
Andrew Jacobs

A: Address Book doesn't include a bulk-edit feature, but there's a way to use Apple's TextEdit to solve this problem. Start by launching Address Book and choosing File: Export: Address Book Archive. (This will create a backup of all your contacts.)

Next, create a group that includes everyone who works for this company. To do this, use Address Book's search field to locate those contacts, select all of the results, choose File: New Group From Selection, and give the group a name. Highlight it in the Group pane, select all of the contacts in the group, and drag them to the desktop to create a single vCard (.vcf) file. (In my testing, I found that when you drag a group containing contacts with embedded images to the desktop, you can't edit the resulting vCard file with a text editor. That's why I suggest dragging the *contacts,* rather than the group.)

Open this vCard file with TextEdit and choose Edit: Find. In the resulting window, enter the company's old address in the Find field using this format: **`123 Main Street;Anytown;CA;12345`**. (You can also just copy the text from the file and paste it into this field.) In the Replace With field, enter the new address using the same format. Click on Replace All and then save the file.

To bring the contacts back into Address Book, drag the file you just saved onto the All entry in the Group pane. A sheet will appear, asking if you're sure you want to import *X* number of cards. Below this question is a message that reads, "*X* cards are duplicates and will be updated." Click on Import to update that company's contacts with the changes you made in TextEdit.



Customize Word Toolbars If you want to add commands to Word's toolbars, the Customize Toolbars And Menus window holds the key.

TOOLS OF THE TRADE

Find Local News

A few tools can help you keep up with what's happening in your community:

Google News Add a regional feed to Google's news aggregator (macworld.com/4426) by clicking on the Personalize This Page link at the top right. Within the pane that appears, click on the Add A Local Section link and then enter a city, state, or zip code and select the number of stories you'd like to view. Click on the Add Section button; your Google news page should now feature your local headlines.

Twitter Searches In addition to writing about the minutiae of their day, people use Twitter.com to report on local events—for instance, fires, surf conditions, and accidents. Tune in to these short (140 characters or fewer) entries, known as *tweets,* by using Twitter's Search feature (search.twitter.com). Enter a search in this format: **`subject near:location within:Xmi`**. So, if you were looking for political tweets within 10 miles of Chicago, you would type **`politics near:Chicago within:10mi`**. If the location includes more than one word—say, San Francisco—use quotes, as in **`near:"San Francisco"`**. You can also use a zip code.

Another Web-based option for finding local tweets is Monitter (monitter.com), which lets you enter a location, a radius for your search, and three keywords. For instance, if there's a local fire, enter **`fire`** in one field, **`smoke`** in another, and **`emergency`** in the last to display nearby tweets that contain any of these words.

If you have an iPhone or iPod touch, you have a couple of options. Both Kazuho Okui's free TwitterFon (macworld.com/4427) and Tapulous's free Twinkle (macworld.com/4099) use the built-in Maps program to figure out where you are and deliver tweets from people who are in the vicinity.

Senior Editor **Christopher Breen** is the author of *The iPod and iTunes Pocket Guide,* fourth edition, and *The iPhone Pocket Guide,* third edition (both Peachpit Press, 2008).

ICON BY PAUL HOWALT

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Source code: MACWORLD

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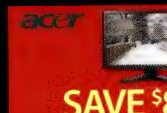

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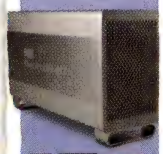

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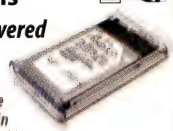

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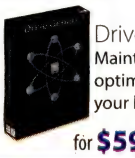

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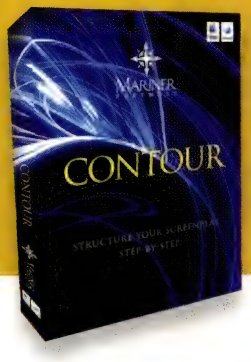

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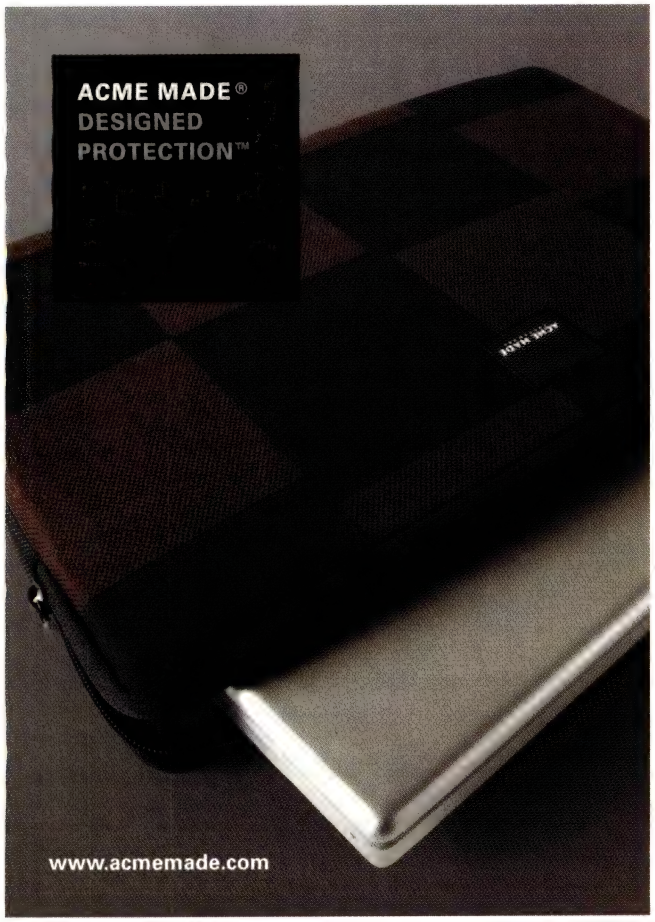

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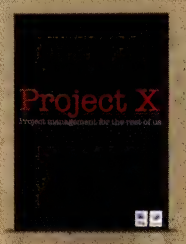

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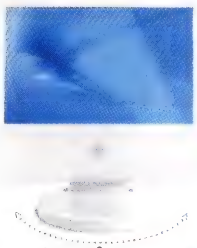

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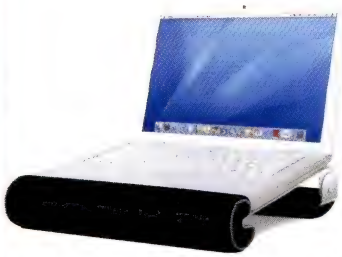

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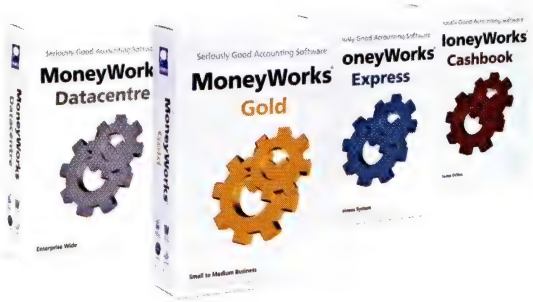

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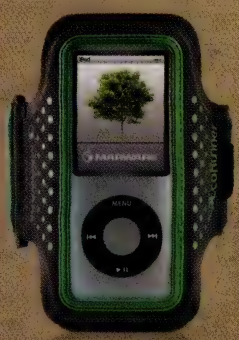

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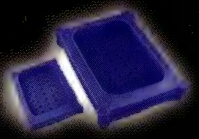

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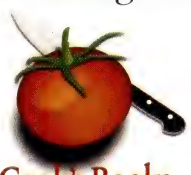

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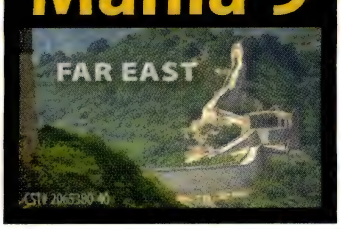

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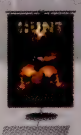

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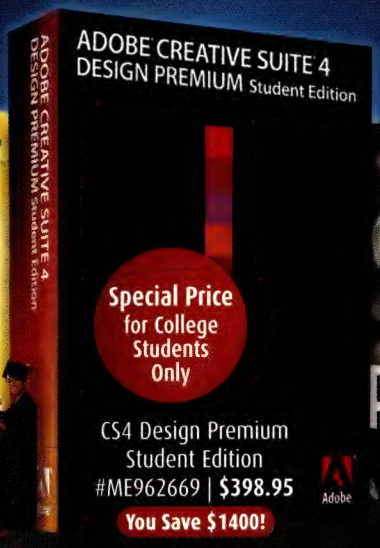

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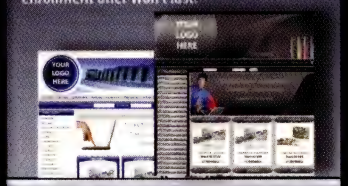

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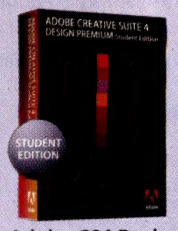

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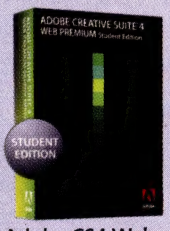

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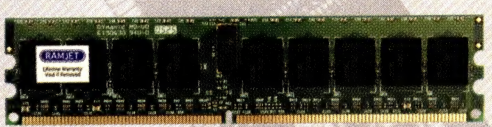

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Choose, but Choose Wisely

Apple, the iPhone, and the smart-phone alternatives

When it comes to smart phones, the iPhone might seem like the only option for most Mac users. But as more companies target the iPhone market, consumers will be inundated with new alternatives. Working with T-Mobile and HTC, Google has rolled out the first phone based on its Android software platform. And Palm recently unveiled the Pre, powered by the company's new webOS operating system. These two new smart phones offer at least one thing the iPhone doesn't: choice.

Android's Dream

Android gives phone makers and consumers all kinds of choices. For example, the T-Mobile G1's Linux roots help it adapt to almost any hardware that interface vendors want to give it: Touch screen? No problem. Physical keyboard? Sure. Trackball? Android's got you covered. The first Android phone to reach the market, T-Mobile's G1, sports all *three* interfaces.

Android also offers several features that the iPhone currently doesn't. It lets you run multiple programs simultaneously and supports picture messaging. Its online market for applications is open to all comers, without the byzantine approval process of Apple's App Store. Android's way of organizing applications—equal parts computer desktop and iPhone home screen—is a lot less frustrating than wading through page after page of iPhone apps.

At the same time, the G1 has some rough edges you wouldn't find on an Apple product. For example, while the G1 supports those three different hardware interfaces, it doesn't support them equally: there are times when you're forced to abandon the touch screen for the trackball or keyboard to perform what should be basic actions. And it doesn't offer several features—including visual voice mail, bulk deletion of e-mails, and a standard headphone jack—that the iPhone does.

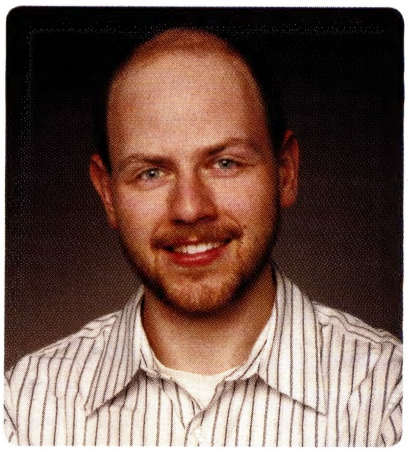
Grand Pre

The Pre, which Palm says will be released later this year, will be yet another iPhone alternative. It represents a big risk for Palm: the company is ditching its old PalmOS in favor of a brand-new system, webOS. For Palm, the choice between old and new was sink or swim, and the company dove into the challenge like Michael Phelps.

Because Palm still hasn't announced a shipping date for the Pre, we can only judge the device based on the brief demo the company gave at this year's Consumer Electronics Show. But if the Pre lives up to the promise of that demo, the iPhone will need to step up its leisurely backstroke.

Ditching PalmOS has given Palm the freedom to develop something completely new. The Pre takes full advantage of that freedom, with a card-based visual interface, a subtle yet effective notification system, and contact management that focuses on people rather than a communications medium; you can jump seamlessly from text messaging with your friend to conversing over IM.

Apple has made a business out of limiting choice; the iPhone epitomizes that ideal.



PHOTOGRAPH BY PETER BELANGER

iChoose You

Meanwhile, Apple has made a business out of limiting your choices; the iPhone epitomizes that ideal.

When it comes to buying an iPhone, you have just two decisions to make: size (8GB or 16GB) and color (black or white); if you opt for 8GB, you'll find that Apple has already made your second decision for you (black). And while the G1 and the Palm Pre give you myriad choices when it comes to working with your smart phone, the iPhone's options are comparatively limited: you can't use a physical keyboard or hardware buttons, only the touch screen. To Apple, this is a conscious design decision: every choice is a potential point of confusion, and so it has limited the iPhone's interface.

Some people see that lack of choice as tyrannical. But the iPhone's blockbuster sales—over 17 million units in less than two years—seem to indicate that many people just want to *use* their smart phone, not face an encyclopedic array of decisions.

Critics argue that Apple should fight these competitive threats by introducing more models—a cheap iPhone nano, for example. But that would mean more decisions for customers, meaning more obstacles on the path to buying a smart phone. So far, Apple is sticking to its belief that the right choice is no choice at all.

Dan Moren is a *Macworld* associate editor.

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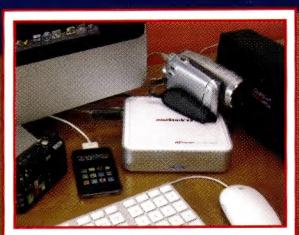

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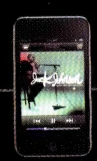

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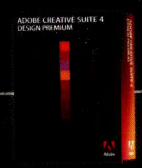

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